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ORIGINAL LECTURES.

HISTORY OF THE ADMISSION OF LIGHT IN THE AFTER-TREATMENT OF CATARACT OPERATIONS.

*A Clinical Lecture,
delivered at the Charleston City Hospital, July 28, 1890.*

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GENTLEMEN: We shall select for our clinical remarks this morning the cataract operation performed several weeks ago upon this woman, sixty years old. After rendering the eye, instruments, and hands aseptic, and using a four-per-cent. solution of cocaine, the linear method was adopted, performing an iridectomy, removing the lens, then closing the eye with isinglass-plaster alone—a plan of dressing the eye which we have exhibited to our classes for several years. The patient was allowed to sit up in the open ward after the operation and to take her ordinary food, though she was not permitted to go into a bright light nor to smoke her pipe, both of which my assistant, Dr. T. S. Bratton, informs me she did in a few days.

I bring this case before you as one which might be termed a perfect result, for the conjunctiva and cornea are clear; there is a well-formed coloboma with no imprisonment of the iris; the pupil is clear; the linear cicatrix is of no great extent, and vision is good for objects at a distance. Out of this window she sees the lawn, and says that she sees some object crossing over the grass. With a two-inch cataract-glass she could doubtless thread a needle. When, however, the eye has undergone so severe a mutilation of its dioptric media, you should watch it with jealous care for weeks, before subjecting it to tests with proper glasses that will prove whether, indeed, you have met with perfect success.

An eye is necessarily hypermetropic after losing its lens, the removal of which destroys its power of accommodation also; if the dioptric apparatus, thus absolutely impaired even when the operation appears successful, is to be of any ultimate use to the patient beyond mere light-perception, it must first be rendered emmetropic for clear vision at a distance; and, secondly, must be rendered myopic for clear vision at 20 or 40 cm. from the eye. To ascertain what has been the result of your surgery, visual acuity must be tested with at least a 10 D. for the one purpose, and with about a 14 D. for the other. This must not be done on a feeble and injured eye for some weeks after your surgical intervention; therefore I desire to guard you against rushing with prurient haste into statements of statistical results until you are certain of the ultimate condition of this sensitive organ. During my service in the hospital

last year, three patients entered whose eyes had been operated upon for the removal of cataract a few months previously. One of these eyes was in such a condition as to endanger its healthy fellow, and I was soon obliged to enucleate the ball. Another of the patients suffered from an irido-cyclitis of some months' duration and lost the sight completely, while the third patient went through iritic complications which, I doubt not, by this time have destroyed the sight.

Entanglement of the iris, after a cataract operation, may exist for some time before giving rise to iritis; a pupil perfectly clear on inspection may, after a short time, reveal a delicate floating fragment of wrinkled anterior capsule, so transparent as to be scarcely discerned, yet quite enough to interfere permanently with vision; and plastic lymph may be organizing into indestructible adhesions which, sooner or later, will surely ruin the results of the operation. Remember, that the size, direction, and depth of your incision, whether this be corneal, scleral, or corneo-scleral, almost always determine the subsequent result of your operation. The incision either avoids or leads to the production of cyclitis with the resultant contraction of the cicatrix and adjacent tissues; or perhaps yet more frequently to incarceration of the iris, which, if it do not involve the eye in panophthalmitis, may, even under the most favorable circumstances, cause chronic cyclo-iritis. An awkward incision is often succeeded by a flattened cornea, produced by a cicatrix that contracts, distorts, and occludes the pupil, dragging it toward the scleral border; and when deferescence of inflammation occurs, such an eye may retain a certain amount of vision for a while, but blindness eventually supervenes from the intra-ocular pressure caused by an abortive iridectomy, a detached retina, and a shrunken vitreous. Postpone judgment, then, respecting your supposed success until the patient uses glasses and can see with them.

I will not detail the steps of the operation which you witnessed the other day. I shall not inflict you, nor waste your time with the platitudes that are too frequently spread out in printed pages of redundant and battologized instructions—how to cleanse the eye, to hold the knife, to make the section, and to extract the lens. These things, by this time, you have seen so often, and concerning which you have read so much, that, with your present knowledge as graduates, you will only be the more ready to criticise severely should you discover me to be a delinquent respecting any of them. Nor shall I indulge in complacent dogmatism respecting any particular method that you should adopt in every case. With the knowledge and judgment which I presume you to possess, you will of course modify your methods according to the particular case. When you take up your keratome, "take no trenchant blade in hand" with dictatorial asseverations against iridectomy. At least let the names of de Wecker, Knapp, and others hold

your Delphic utterances in abeyance. Perform iridectomy when it is obviously indicated; occasionally leave the iris with its perfect pupil when this brilliant result can be effected; while in the aged, in whom the suspensory ligament is feeble or relaxed, extract the lens in its capsule, as you saw me do in this woman, so as to avoid the possibility of a secondary pupillary membrane. Indeed, gentlemen, eclecticism in surgery is a lesson which experience is sure to teach.

My object, however, on this occasion is to speak to you of the after-treatment of cataract operations without excluding light. I can give no offence to the historian of our professional literature in dwelling exegetically upon the open method of dressing the eye after the extraction of cataract, as I thereby will furnish you with such information respecting our varied methods of treatment that you shall not suppose that what you and others have seen me do is an innovation of my own.

Toward the end of the last century Daviel, a Frenchman, first taught us that a cataractous lens could be extracted through a large corneal flap; a most difficult and extremely delicate operation, attempted for many years after by only a few expert surgeons, for the eye became practically opened in half its corneal extent, and was therefore often evacuated—vitreous, lens, and all its contents—by sudden contractions of the recti muscles. After such a corneal section it was found absolutely necessary to place the eye in a specially secured condition against anything like spasmodic contractions, or even movements associated with those of the muscles of the opposite eye. It became requisite then to put the eye up in splints, so to speak; while it was on physiological principles equally important to prevent the other eye from roaming about, so as to check what we know constitutes the associated movements of the recti muscles of these organs. Therefore was it that both eyes were bandaged; and for the careful adjustment of compresses that could exert the minimum of pressure with the maximum of resistance to accidental, spasmodic, or associated movements of the eyes, every variety of appliances and bandages were invented from Daviel's to the popular bandage known as Liebreich's.

Again, the painful ingress of light which, of course, very naturally followed upon the first exposure of these organs for simple inspection after the operation, was found to be so distressing, oftentimes so intolerable, and even dangerous through sympathetic retinal excitation, that a darkened room, or bed inclosed by curtains, came to be resorted to; not that light itself was thought to be injurious, but its sudden entrance through preternaturally dilated pupils and impingement upon the now sensitive retina, excited reflex sympathetic trouble in the eye that had been operated upon.

It is very significant that as soon as Beer invented the well-known and well-devised knife that facilitated a safer and easier performance of the corneal-flap operation without escape of the aqueous, and that secured a more frequent cicatrization of the wound, that he himself became the first to advocate the introduction of light into the patient's apartment, and urged others to follow his example; but it was not until von Gräfe introduced his peripheral linear incision through the upper segment of the cornea, of such inconspicuous extent as to heal

readily in a few hours or days, that so much danger was obviated, and so much more confidence felt in its performance even by the most inexpert, that the idea of disencumbering the eyes of heavy dressings, and of no longer enforcing precautionary measures against improbable accidents suggested itself.

It is a valuable thing to be possessed of an idea that rests upon a rational scientific basis; and that is carried out with patient, earnest, persevering conviction of its ultimate usefulness and success. The thought becomes so affiliated with one's nature, that the expectant results in their minutest details present themselves ever and anon to the mind until its accomplishment is theoretically and practically fulfilled. Such a predominant idea evidently occupied the mind of Walton while adopting his after-treatment of cataract. In his published record we find the method announced with the fulness of a completed achievement, and with every argument that justifies the method. So important are Walton's precise yet epitomized directions that I shall read them to you word for word from the *Medical Times and Gazette*, December 3, 1870. He says:

" The first thing is to close the eyelids with a couple of strips of court-plaster about an inch and a half long and a quarter of an inch wide this insures adaptation and supports the corneal flap. . . . Such closure accomplishes all that can be done for the wound without disadvantage. . . . The tears and the aqueous readily escape because some portions of the eyelids are uncovered. Bandages and compresses of all kinds are injurious. They are hurtful in proportion to their action. All pressure, beyond that which is naturally produced from closing the eyelids, must tend to be prejudicial, and at times to be positively damaging. Whatever keeps the eye hot must be bad—whatever soaks up the secretions is objectionable. I am well aware that some surgeons pack the eye with cotton-wool or charpie and subsequently apply a bandage. This system is like the French method of treating a stump after an amputation. I believe it to be important that the patient be well fed, and, therefore, I allow him a full diet. It is a mistake to prescribe liquid food under the idea that chewing is hurtful to the eye, for in man the muscles of mastication cannot in any way influence the eyeball. It is different in most of the lower carnivora."

Now, this was Walton's treatment in 1868-69, concerning which he goes on to say:

"I believe its simplicity is the chief reason why this—my practice—is not more generally followed. It leaves nothing for meddlesome fingers to do."

But Beer, as I have already said, opposed bandages and was in the habit of closing the lids by "*strips of sticking-plaster*," which he carried, however, down over the cheek. Beer was followed, as we could show, by many German operators; and all this was in 1801.

Lawrence, in his celebrated lectures delivered at the London Ophthalmic Infirmary, and published afterward in the *Lancet*, October, 1825, p. 145, objects to bandaging the eyes, and writes:

"The application of a bandage to the eye is not to be regarded as an essential point of treatment; it is rather employed to keep the eye quiet and to guard it from any slight accident. On this account gentle confinement during the night is expedient; but the part may be left

uncovered, or with a damp rag over it, while the patient is awake."

Lawrence states, also, that:

"Mr. Tyrrell has suggested that when the patient has the advantage of a good attendant, he might remain for a few hours on a couch or easy chair; so that he will be less likely to fall asleep than in bed, and thus have a better chance of sleeping at night."

The most liberal praise must, however, be awarded to Walton, whose practical injunctions on this subject more particularly arrested the attention of oculists, though receiving, perhaps, scarcely deserved prominence until Wilde, of Dublin, confirmed these teachings and practice. It was from Wilde that our own lamented friend, the late Dr. C. R. Agnew, obtained his knowledge respecting this treatment, and adopted the same in his own practice. Writing to me in July, 1885, in the letter which you here see, Dr. Agnew refers thus to this important matter:

"In the proceedings of the American Ophthalmological Society for 1869 you may find a paper by your humble servant, with the title 'A method of dressing eyes after cataract extraction and other ophthalmic operations requiring rest by exclusion of light.' In that paper I take ground against shutting patients in the dark. In founding the Brooklyn Eye and Ear Hospital, in 1868, provision was made to provide light in the wards. The same was true and continues to be so in the case of the Manhattan Eye and Ear Hospital, opened in 1869. Both these hospitals are as light as any other hospital that I have seen. I have taught in the College of Physicians and Surgeons for more than twenty years against incarcerating eye patients in the dark."

The merits and advantages of so beneficent a release offered to cataract patients were not long withheld from American surgeons who keep abreast with the progress of their science. So we find that in Philadelphia Drs. Levis and Roberts at once acknowledged the importance of such a course, and for years have followed no other in the Pennsylvania and in the Wills Eye Hospital. Since the establishment of an Ophthalmological Department in the Jefferson Medical College Hospital, in 1877, Dr. Thomson also has banished the proscriptive measures usually enforced under such circumstances. The American editors of the fourth edition of *Stellwag's Diseases of the Eye*, 1873, on page 641, say:

"The discussion in this country of the subject of cataract and its treatment being an almost everyday occurrence, American surgeons have been led to modify materially the after-treatment. The patients are not confined to their beds so long as formerly, and surgeons are not so particular in excluding every ray of light. A few turns of a flannel roller-bandage, or even a piece of black silk placed over the eyes and retained in position by strips of adhesive plaster, is all that is ever used, and then the room is moderately darkened for several days."

The same course has been adopted for years by many oculists; thus we are informed that Dr. Charles E. Michel, of St. Louis, has for eighteen years pursued a like plan, and has published his reasons in its favor. Dr. Joseph A. White, of Richmond, Va., in his annual report of the work done at the Eye, Ear, Throat, and Nose Infirmary, refers to the success of dressing with goldbeaters' skin, after Dr. Michel's plan, in favorable

cases and in docile patients. Impressed with the results of Dr. Michel's practice, Dr. Chisolm, of Baltimore, has been recently induced to give the method a trial.

I could furnish exhaustive proof by an unbroken web of evidence of the value of this method of after-treatment did time permit; but enough has surely been said to rectify any misapprehensions as to the source whence we have derived our knowledge of this simple, soothing, beneficent, and defensible method; and it only remains to recommend it highly to your attention, not only for its intrinsic value in almost every case, but for the avowed popularity it has attained both in Europe and America. Isinglass and rubber strips, undarkened apartments, and freedom from restraint in the management of cataract and iridectomy operations, are not now under trial for the first time among ophthalmologists; the names of Walton, Wilde, Lawrence, Tyrrell, and Agnew will assuredly permit you to take their counsels in this matter safely "on trust;" in resorting to it, then, in your future practice you will not be treading upon doubtful ground, and will not have to watch with anxious solicitude lest some untoward accident should befall your patient.

ORIGINAL ARTICLES.

SURGERY OF THE LATERAL VENTRICLES OF THE BRAIN.

Résumé of Paper read before the Surgical Section of the Tenth International Medical Congress, Berlin, August, 1890.

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AFTER alluding to the fact that puncture of the brain for the relief of hydrocephalus dates back to the case of Dean Swift in 1744, Dr. Keen pointed out that the early operations were done through the anterior fontanelle, and not by trephining. In 1881 Wernicke first proposed to trephine and puncture the lateral ventricles. This proposal was adopted by Zenner, of Cincinnati, in 1886.

On November 7, 1888, Dr. Keen read a paper before the College of Physicians of Philadelphia,¹ in which, in ignorance of these earlier propositions, he proposed to trephine, puncture, and drain the lateral ventricles. The idea was suggested to him by a case of exploratory trephining for supposed abscess in the temporo-sphenoidal lobe. The post-mortem examination showed that there was distention of the lateral ventricle in consequence of tubercular meningitis, and that the drainage-tube had reached to within a quarter of an inch of the ventricle without producing inflammation. He pointed out the fact that the brain would not bear pressure nearly as well as the other viscera, and hence the need for early trephining. He then reported the following three cases of his own.

CASE I.—A boy, four years old, was threatened with blindness from acute hydrocephalus. This

¹ THE MEDICAL NEWS, December 1, 1888.

condition was thought to be due probably to tumor of the cerebellum, though on which side was doubtful. Dr. Strawbridge had examined the eyes and had found that there were choked disks with retinal hæmorrhages and swelling. The swelling of the disk measured 2.30 mm. in each eye, and in view of the rapidly-increasing blindness he brought the child to Dr. Keen for operation. This was done at the Woman's Hospital, Philadelphia, January 11, 1889.

A puncture was made at a point one inch and a quarter behind the left meatus and the same distance above "Reid's base-line." A half-inch button of bone was removed and the brain punctured by a hollow needle (No. 5 French catheter scale), which was directed toward a point two and a half inches vertically above the opposite meatus. At a depth of about an inch and three-quarters the resistance suddenly ceased, and the cerebro-spinal fluid began to escape. Three stout doubled horsehairs were then passed into the ventricle. No peculiar phenomena occurred during the operation. The highest subsequent temperature was $101\frac{3}{4}^{\circ}$ for a brief interval, but most of the time it was normal. In two days the swelling of the optic nerves had fallen to 1.57 and 1.63 mm. in the right and left eye respectively, and by the sixth day to 1.09 mm. in both eyes. By the seventh day the swelling of the optic nerve had increased, and the drainage was not very free. The tumor was sought for by probing through the drainage-opening into the occipital lobe, almost to the occipital bone. No tumor being found by this procedure, an opening a quarter of an inch in diameter was gouged in the occipital bone below and to the left of the inion. The cerebellum was explored by a probe to the depth of two and one-quarter inches in the direction of the left lobe, and again obliquely across into the right lobe, but no tumor was found. This wound healed by first intention without any fever.

On the fourteenth day the horsehairs were removed and a small rubber drainage-tube was inserted into the ventricle in order to give free vent to the fluid. This was attended by no pain or discomfort. By the twenty-eighth day the child had become somewhat restless, and the swelling of the disks, which had fallen to 0.83 mm., had again increased to 1.33 mm. in each eye. Accordingly, the right side of the skull was trephined at the corresponding point above and behind the ear, and the occipital lobe was punctured to the tentorium, but no tumor was found. A drainage-tube was then passed directly into the right ventricle, being inserted without the prior puncture by a hollow needle.

On the thirty-second day, by a fountain-syringe, the bag of which was raised about six inches above the head, the ventricles were irrigated from side to side with warm boric acid solution—4 grains to the ounce. While the connection was being made with the tube the child was a little restless, but so soon as the warm water began to flow into the brain he became quiet and said that "it felt good." The fluid slowly escaped from the opposite side. The bag of the syringe was then elevated until the escape

became quite free, but not a continuous stream. It was estimated that about eight ounces passed into the ventricles, of which about two ounces escaped from the opening on the opposite side, consequently about six ounces were retained. No phenomena whatever were apparent during the process described except the comfort shown by the child.

On the thirty-fourth day the ventricles were again irrigated from side to side with plain boiled water, which gave less relief than the boric acid solution, but produced no ill effects. A few days later the child was evidently not so well, and he died on the forty-fifth day, the first drainage-tube having been in place nearly continuously after the operation.

At the autopsy the cerebro-spinal fluid was found perfectly clear, more so than that obtained at the first tapping, which was slightly turbid. The ventricles were greatly distended with fluid. In the left lobe of the cerebellum a sarcoma was found, which had compressed, as had been suspected, the straight sinus and the veins of Galen, and had encroached upon the fourth ventricle. The sinuses through which the rubber tubes passed were not surrounded by an inflammatory zone. There was no injury of the opposite wall of the ventricle, and no trace remained of the punctures in the cerebrum or cerebellum. The oblique puncture made in the latter had gone through the tumor, which, however, was too soft to be perceived at the time.

CASE II.—A boy, aged three and a half years. Hydrocephalus set in four or five months after birth. His mental condition was extremely weak.

On March 5, 1889, the left ventricle was tapped in the same manner as in Case I. At a depth of an inch and a quarter the resistance suddenly ceased, and the cerebro-spinal fluid immediately escaped. As in the first case, the fluid was slightly turbid. Drainage by horsehairs was in this case also not very effective. The highest temperature after the operation was $100\frac{3}{4}^{\circ}$, and there was marked increase in the use of the right arm, which had been paretic. The drainage being insufficient, on the fourth day the ventricle on the opposite side was opened, and a small drainage-tube inserted in each ventricle. These were stopped by disinfected plugs of wood, with a V-shaped slot cut in each, so as to permit the escape of the fluid at the rate of about thirty-five drops a minute. As this seemed to be too free, after four and a half hours other disinfected plugs were inserted with smaller slots. Convulsions began the next day, and when Dr. Keen reached the patient he found the convulsions constant. He then decided to replace the fluid that had been drained away, and having no time for the preparation of an artificial cerebro-spinal fluid, he used plain boiled water for this purpose. This was siphoned from a height of about eight inches. When the warm water began to flow into the ventricles the spasms ceased. The flow was then immediately stopped by squeezing the tube, and in a few minutes the convulsions returned. They were immediately arrested again by allowing the water to flow. Eight times the convulsions returned, and each time they were arrested by a siphonage of from half an ounce to one ounce of fluid. Dr. Keen estimated that the amount of

fluid injected was nearly a pint. No further spasms occurred, but the child gradually failed, and died in the afternoon. The post-mortem showed great hydrocephalic distention, but no injury from the operation.

CASE III.—This was a case of tubercular meningitis, with unilateral acute internal hydrocephalus of the left ventricle. The foramen of Monro, as determined at the autopsy, was closed. This closure was attended by unilateral distention, and produced right hemiplegia. In this respect the case is probably unique. The left ventricle was tapped through the arm-centre. The child was almost *in extremis* when the operation was performed, and died about four hours later. At this operation also it was easy to determine when the ventricle was reached.

Dr. Keen next referred to the case reported by von Bergmann in his *Surgical Treatment of Brain Lesions*, as the first case ever operated upon, though not published until after the reader's paper and a note upon his first case. Von Bergmann's case was operated on, July 15, 1887, by the anterior route, and proved fatal on the fifth day. Dr. Keen then described two cases reported to him by letter by Mr. Mayo Robson, of Leeds, as follows:

A girl ten years old, without preceding illness, began to have pain in the left ear, and was feverish, December 19, 1888. In three days a discharge followed, which gradually lessened, but was still present a month later when admitted to the hospital. There had been also rigidity of the neck and twitching of the right angle of the mouth. No vomiting; slight mental disturbance. On admission, January 19, 1889, her temperature was 105°; she complained of pain in the left side of the head; there was paresis of the right arm and leg which gradually developed into complete hemiplegia and aphasia. Optic disks inflamed.

Operation, February 7, 1889: Trephining was done over the arm-centre; the dura was found healthy. On exposing the brain it did not pulsate, and seemed to be compressed. An exploring-needle was passed deeply in various directions in the hope of reaching pus, but failing to find any the needle was pushed into the lateral ventricle and a half-ounce of clear fluid was drawn off. After this, pulsation returned in the brain. The wound was closed as usual, no drainage being employed.

On the next day there was slight power in the arm, soon after in the leg, and on the third day she could answer simple questions. Within a month the hemiplegia was gone, and six months later she was perfectly well.

Even a half-ounce of fluid seems to have imperilled life by pressure, and the operation undoubtedly saved the patient's life—a most important and encouraging lesson for the future.

Mr. Robson's second case was one of an infant who was trephined for rapidly-increasing hydrocephalus, following treatment of spina bifida by Morton's injection. The skin was trephined an inch in front of the Rolandic fissure over the second frontal convolution. The dura was opened and the needle of an exploring-syringe inserted into the

ventricle, which was reached an inch from the cerebral surface. By means of Lister's sinus-forceps a rubber drain was inserted, following the needle as a guide. The drainage was so free that it wet the dressings and ran on the floor, and after this the patient seemed much relieved. The drainage soon became less free, and on the third day the child died in convulsions. The post-mortem showed that the brain had shrunk so much that the end of the tube was lying between the dura and the brain.

Dr. Keen then referred to the case of Ayers and Hersman, in which, on December 4, 1888, puncture was made over the coronal suture an inch and a half from the middle line. The operation was repeated on April 28, 1889, by Dr. Hersman. The first operation was followed by the escape of from four to eight ounces of cerebro-spinal fluid, which caused evident improvement. At the second operation no fluid was found in the ventricle, and the child was very much improved.

Of the 7 cases thus far reported, 2 have recovered and 4 died—a mortality of 71 per cent., which, for a new operation, and for so extremely a dangerous condition, is far from discouraging.

Dr. Keen then entered into the question of the technique of the operation, and pointed out that it was not difficult or dangerous, and that the rules that he had laid down in his former paper¹ had proved to be correct, and that in his judgment the lateral route is the best, except in special instances. From his experience in these three cases he urges that the puncture be made by a canula (No. 13 French catheter scale), and that the drainage shall not be secured by a tube, but by a sufficiently large bundle of horsehairs, and that too much haste shall not be used in draining off the fluid, as such haste may cost the life of the patient, as in Case II.

The speaker then took up the question of hæmorrhage into the ventricles, and referred to the following case, reported to him personally by Professor Frederic S. Dennis, of New York. It is the first case in which a clot has been removed from the lateral ventricle.

A man, aged thirty-six years, was struck on the right side of the head by a falling ladder, but was not rendered unconscious by the blow. An hour after admission to the hospital his left arm became paralyzed, and later, the face and leg also. A diagnosis of cerebral hæmorrhage was made, and six hours after the accident he was operated upon.

A linear fracture without depression was discovered, and trephining was done over the arm-centre. No epidural and no subdural clot was found, nor was any clot discovered when the brain-tissue was incised. Accordingly, an incision was made directly into the ventricle, and when the retractors were slightly separated a blood-clot about the size of a pullet's egg shot out of the ventricles with enough force to fall several feet from the patient's head.

¹ Loc. cit.

Gentle irrigation and drainage were used, and the wound was dressed in the ordinary manner. The patient never recovered from the paralysis, became delirious, and in three days died comatose.

The autopsy confirmed the diagnosis, and also showed that there had been great laceration of the cerebral substance, to which fact death was due. There was no meningitis and no suppuration.

The author then narrated four cases of abscess bursting into the lateral ventricle, beginning with the historic case of Detmold, in 1849, and adding three cases; one of Pancoast's, one of Morehouse's, and one of Morton's. All of the cases died, a result that would be expected after so serious an accident.

The next class of cases mentioned was that due to rupture of the ventricles by compound fracture. Two cases were referred to, one of Massa's, the other of Hewitt's, in each of which the lateral ventricles were primarily torn and there was free discharge of cerebro-spinal fluid. Both of these cases recovered.

Of secondary opening of the ventricles he mentioned seven cases, reported by Bouchacourt, Berenger de Carpi, Erichsen, Rodenstein, Cheever, and himself. Strange to say, four of these seven cases recovered.

Five cases of rupture of the lateral ventricles, from simple fracture of the skull, were also referred to, one each described by Thompson, Haywood, and Erichsen, and two by Lucas. All of these cases were in young children, five years of age or less, and all showed secondary soft swelling under the scalp. The cerebro-spinal fluid was removed, either by tapping, or, as in one case, by rupture. Of the five cases three recovered.

After consideration of the entire subject the following conclusions were reached:

1. Injuries involving the ventricles, the result of compound fracture or of trephining, and involving great disturbance of the cerebral substance, are not necessarily fatal, for ten of the twenty-six cases here reported have recovered. In these few cases compound fractures and extensive injuries, unless primarily fatal, seem to be less dangerous than rupture of the ventricle from simple fracture. They should be treated antiseptically by drainage and the usual treatment of wounds in other regions. If pus follows, or if the cerebro-spinal fluid becomes dammed back, causing symptoms of pressure, incision and free drainage should be resorted to.

2. In cases of simple fracture involving the ventricles, experience would seem to indicate that it would be wise not to attempt any operative procedure unless threatening symptoms supervene. If necessary to interfere, the cyst containing cerebro-spinal fluid should be continuously and slowly drained by a small bundle of horsehairs, rather than by freer evacuation. In the majority of cases con-

stant pressure, and but little active treatment, may be all that is necessary.

3. Abscess of the brain bursting into the lateral ventricle has been thus far uniformly fatal, and demands the promptest treatment possible. The suggestion made for immediate bilateral trephining and irrigation of the ventricles can, at least, do no harm, although the possibility of its doing good is but slight in so serious a condition.

4. Hydrocephalus, whether acute or chronic, is usually a fatal disease. Surgical procedures for tapping the ventricles for its relief are easy, and certainly do not *per se* involve great danger. Whether they will cure the disease is, as yet, not determined.

5. In acute effusions, tapping, with or without drainage, as may be thought best, will certainly save some lives otherwise doomed to be lost; and, in the chronic form, long-continued slow drainage at an early period is at least worthy of a trial, with a reasonable hope of success in a few cases.

6. The methods here described for performing the operation, especially by the lateral route, are at least worthy of a trial, with a view to determine the value of such surgical procedures.

7. After trephining and tapping the ventricles, irrigation of the ventricular cavities from side to side is not only possible, but it does no harm. In abscess involving the ventricle, and possibly in other conditions, it may possibly do good. The fluid used for such irrigation should not contain anything which, if retained and absorbed, might do harm. An artificial cerebro-spinal fluid, or a simple boric acid solution, would seem to be the best for such use.

8. Convulsions, due to too rapid withdrawal of the cerebro-spinal fluid, may be checked by injecting an artificial cerebro-spinal fluid, or such other innocuous fluid that is available.

9. In either irrigating or injecting the ventricles it is probably desirable that the air should not enter, but such entrance of air does not seem to be productive of mischief.

10. In hæmorrhage into the lateral ventricle, at least of traumatic origin, immediate trephining and evacuation of the clots should be done, which in a few cases will probably be followed by a cure, unless the injury of the cerebral tissue is so great as to be incompatible with life.

THE SO-CALLED MOUNTAIN-FEVER OF COLORADO AND ADJACENT REGIONS, ITS DESCRIPTION AND TREATMENT.

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In Colorado it is very common to hear the term, mountain-fever, both from the laity and from physicians. The term is not confined, however, to this

State, but is used more or less throughout the whole Rocky Mountain region. It will be interesting to know just what type of fever is meant by this, and its probable etiology, symptoms, and successful treatment.

Types of fever vary with diversities of climate, soil, altitude, etc. I am quite certain that I first observed cases of the so-called mountain-fever in the Arkansas River valley, in western Kansas. There it was not known by the above appellation; nevertheless, several years' experience with the disease convinces me of its identity with mountain-fever. In 1884 and 1885 there was rapid occupation and settlement of new lands in the vicinity of Kinsley, Kansas, where the writer was then in active practice. During these years there was an exceptionally heavy rainfall. Farmers were encouraged, vast tracts of prairie were converted into farms, and cities and towns were built. In this rush after homes and business little attention was paid to the source and quality of the drinking-water, a pool, or stream, or shallow well supplying it. The result was that many communities were fever-stricken. After the first extensive outbreak isolated cases continued to appear, and may occasionally be found at the present time.

In 1887 I removed to Rocky Ford, Colorado, a small town, 4100 feet above sea-level. Here, too, under the development of the irrigation system of agriculture, a rich valley was being rapidly converted into a farming country. The Arkansas River, the only stream or body of water in the vicinity, flows in a well-defined channel, and with a strong current. The current is also strong in the several irrigating canals, and there is no stagnant water from which effluvia would be expected to arise. Water was freely distributed over the newly-cultivated soil. The supply of drinking-water was drawn from the open ditches, filtered more or less thoroughly, and stored in cisterns. When carefully filtered and kept in clean reservoirs the water is clear and tasteless, and develops no odor for many months, if at all. It is, however, "hard," and is called *alkali* water.

Even in the mountain districts the same system of irrigation and water-supply exists, and the same types of fever prevail. The soil of the valley is a sandy loam, very rich and productive. The natural grasses of the valley are rather sparse, and the timber-belt is confined to narrow limits along the Arkansas.

With our previously conceived notions of the origin of malarial poison, it is difficult to believe that the fever in question is of malarial origin. A dry, almost rainless climate; a dry soil, sparsely covered with vegetation before the introduction of agriculture; an elevation of 4100 feet above sea-level, no marsh lands, and no stagnant waters—the very opposite to countries where we usually find the mala-

rial poison. Yet, some eminent authorities recognize that the agent producing malarial fever is found under these circumstances. Professor Bartholow, in his *Practice of Medicine*, in defining the limits of malaria, says: "One important factor is elevation, malaria not breeding higher than 5000 feet above the sea, which seems to be its maximum limit. The apparent exceptions to this, afforded by the so-called 'mountain-fever' of Colorado will be alluded to hereafter." The same writer also observes: "That malarial poison is soluble in water, and is contained in the surface-water of infected districts, seems now to be well established. The author found the surface-water of Kansas to produce malarial fevers and cholera." Yet, withal, it is not difficult to find physicians of large experience who will deny the malarial origin of mountain-fever. As for myself, I have seen well-defined ague in persons who have not been away from the vicinity of Rocky Ford for a number of years. These cases were certainly contracted there. I have also met with typical remittent fever. These are not classed with the form of fever usually known as mountain-fever.

The description of several cases taken from the writer's note-book will prepare the way for a correct description of the disease, and perhaps furnish a true picture of it:

CASE I.—Walter B., aged twenty-one years; usually strong and healthy. He had been complaining for a few days, when, on April 9th, was taken with a chill, followed by high fever, headache, pain in right groin and in back and limbs. He was much depressed, and quite weak. I saw him on April 10th, and found the above symptoms persisting. Temperature 102°; pulse 100, and rather feeble. He had had several large watery stools. Tongue was rather heavily coated, but the tip was bare and red.

I ordered the following:

R.—Aromatic sulphuric acid . . . 2 drachms.
Infusion of digitalis . . . 2 ounces.

One teaspoonful every three hours.

Also:

R.—Sulphate of cinchonidine . . . ½ drachm.
Extract of cascara sagrada . . . 6 grains.—M.

Divided in six capsules, of which one was taken every three hours.

I also directed a milk diet to be employed.

April 10. Morning temperature 103.5°; pulse 105; no nausea; no delirium; skin moist; bowels moved once during the day. Treatment continued.

11th. Morning temperature 101.5°; pulse 90, and strong. In the evening the temperature and pulse were unchanged. Patient has taken three pints of milk, and without discomfort. Treatment continued.

12th. Morning and evening temperature 99°; pulse 85. Headache and pains entirely gone. Tongue cleaning; patient feels stronger.

From this time he continued to convalesce; but

from the time required it was evident that the disease, even in its short course, had made quite a profound impression on his system.

CASE II.—J. H. G., adult; strong, and of a full habit; had been working on an irrigating canal for several days, and drank water therefrom. He had had slight diarrhoea, and felt weak. In the night he was taken with chills and diarrhoea; severe headache and pains in back and limbs. The stools, he says, were foetid and ochre-colored.

On examination I found the temperature 102° ; pulse 83. There was perceptible enlargement of spleen, and some tenderness over the abdomen. Patient's face was congested, and the eyes quite injected. I ordered the following:

R.—Sulphate of quinine 5 grains.
Sanguinarine $\frac{1}{4}$ grain.—M.
To be taken at night.

Also:

R.—Dilute hydrochloric acid, } of each 2 drachms.
Glycerin, }
Water sufficient to make 2 ounces.
A teaspoonful every three hours.

A milk diet was ordered.

On the evening of the following day I found my patient quite comfortable; tongue cleaning; pulse and temperature normal. I ordered a dessert-spoonful of elixir calisaya after meals, and dismissed the case.

CASE III.—Richard D., aged seven years; taken on the night of April 5th with a chill, and severe pain in the gastric region. I found him with a temperature of 104° ; pulse 120, and small; tongue coated, with the papillæ prominent; tip red and strawberry-like. The child was in great pain.

I directed warmth to be applied to his feet and limbs, and gave him two-drop doses of fluid extract of gelsemium every hour until the skin became moist, and the pain somewhat relieved.

April 6. At 7 A. M. patient much the same; temperature 104.5° ; pulse 128; some delirium; headache; pain in spine and in back of neck; nausea and vomiting. Can discover no tenderness over the spine. The coldness of the extremities has disappeared; bowels are confined. I ordered the gelsemium to be continued in two-drop doses every two hours, and also one grain of calomel every two hours until five doses were taken. For the thirst I allowed an effervescent draught. Tepid compresses were employed to reduce the high temperature.

7th. Patient passed a restless night, the fever at times rising above 105° ; pulse 130; is nervous, and tosses about in bed; headache still present, and uneasy sensations along the spine are complained of. Vomiting has ceased, and the patient retains milk. No tenderness along the spine. During the day the temperature fell more than a degree. No evacuation from the bowels. Pupils contracted. The gelsemium and the tepid-water compresses were continued. I ordered 5 grains of sulphate of quinine by the rectum every three hours.

8th. Temperature 104° at 6 A. M.; pulse 120; patient lies with arms flexed and rigid; stupor;

pupils dilated. The bowels acted freely during the night; some tenderness along the spine, especially over the upper vertebrae; movement of the limbs causes pain; no vomiting; thirst considerably abated. Mild counter-irritation along the spine was ordered; quinine discontinued.

9th. Temperature 103° ; pulse 114; patient sleeps naturally at intervals, and wakens less delirious; coughs considerably at times; takes milk freely at regular intervals; bowels have acted twice; tongue moist, and coated toward the tip; raised in flakes. Treatment continued.

10th. Temperature 103° ; pulse 105; patient comfortable and rational, and takes milk freely. Expression good; changes his position readily. At 3 P. M. his pulse fell to 101.2; pulse 96, and compressible; still coughs considerably. At 6 P. M. he was sweating freely, and passed a large quantity of urine. Later, his temperature became normal, and he slept well.

From this date there was slow convalescence, though on alternate days, for some time, mild fever appeared. With the administration of the following mixture, to which I am very partial under certain circumstances, the patient recovered:

R.—Dilute nitric acid 1 drachm.
Sanguinarine 1 grain.
Glycerin 3 drachms.
Water, sufficient to make 2 ounces.—M.
One teaspoonful three times a day.

This case is rather typical of the disease in children, and my note-book could furnish other very similar examples. They all show the profound impression made upon the spinal cord and brain.

Symptomatology.—From these and similar cases the history of the disease may be sketched as follows: The premonitory symptoms are usually a chill, or chilly sensations, followed by fever more or less marked and persistent. The temperature ranges from 102° to 105° at the onset, but usually falls several degrees during the first week. There are no uniform or marked remissions, but, often, intermissions will follow the onset, and continue for a week, if the case is untreated, when the fever will return and assume a continued type, lasting from two to four weeks. There are often localized pains, and especially in children there is severe distress in the gastric region. The head, back, and limbs usually ache. These symptoms often very closely simulate those of spinal meningitis, as the above reported cases show. In adults the tongue is coated, excepting the tip, and sometimes the edges. A clean tip is always seen in cases that ultimately assume the typhoid type. In children the enlarged papillæ project through the coating, and the tip of the tongue is strawberry-like. The pulse and temperature usually preserve the normal ratio; if not, the former is rather slow. There are often nausea and vomiting, though these do not generally persist. The bowels may be loose or confined. In children

they are often stubbornly constipated, and difficult to regulate with medicines. The liver and spleen are frequently perceptibly enlarged. As a rule, there is no tenderness in the right iliac region, though this and a tympanitic condition sometimes arise.

The headache is often excruciating. Delirium is not usual, but when it exists it is low and muttering. The spinal symptoms are often marked, and consist in shooting pains passing up and down the spine and into the extremities. There may be tremor. Sometimes the patient loses the power of motion.

In not a small percentage of cases cough and bronchial irritation are present.

The eyes are usually suffused, and show slight signs of jaundice. In children the pupils are widely dilated. The skin is generally dry, sweating occurring only as the fever abates. Often the disease breaks up with a copious sweat and several free evacuations from the bladder and bowels.

Convalescence is slow and accompanied with a strong tendency to the development of a mild but obstinate intermittent fever, quotidian in type. Relapses are apt to follow at the septenary periods, unless the case is closely watched and carefully treated.

Treatment.—Having already specified the measures and remedies available in this disease, it would seem that little more need be said regarding the treatment. However, with a riper experience and wider observation I am constrained to speak in very positive terms on this subject.

The first proposition is that this so-called mountain-fever tends, under favorable circumstances, to pursue a benign course, but this does not signify that treatment is useless. By proper nursing, dieting, and medication, the disease can be shortened, and the suffering of the patient greatly mitigated. Baths are very useful, and should be systematically given. The temperature rarely rises to the danger-point, yet, for the harsh, dry skin, sponging with tepid water is effective. In children, when the temperature reaches the highest point, I direct tepid-water compresses to be applied over the abdomen and thighs. These often abstract enough heat to cause a perceptible fall in the temperature. For the hot, throbbing temples cold applications often add greatly to the patient's comfort.

The diet is not to be overlooked. I almost invariably order several ounces of milk to be given every three hours. It is not often that this regimen disagrees. When I find some contra-indication or some obstacle to its use, I order broth or some good beef-extract. The reason that I insist upon a fluid diet is that the bowels are already loaded, and slow to respond to medicines. When diarrhoea exists absorption is so interfered with that only the most assimilable foods enter the system.

The patient having no appetite, it will not do to consult his preferences and leave him without sustenance, or allow hurtful articles to be given. A due allowance of cold drink contributes greatly to the patient's comfort and welfare.

As to medicines, there are several that do positive good. Gelsemium, in from two- to five-drop doses of the fluid extract every three hours, will frequently control the fever, mitigate the spinal pains, and break up the disease. I have tried it alone in many cases, and with very uniform results. Even after quinine had been employed without satisfactory results gelsemium produced good effects.

The mineral acids, nitric or hydrochloric, or a combination of the two, are also useful. It is usual with me to employ a combination of the acids and gelsemium.

As to the use of quinine and its congeners, for some reason they are not satisfactory. They will check the disease, but they are slow in producing their effect, and in the high altitudes where this fever is found they cause an untoward impression on the whole nervous system. Usually there is more or less pulmonary congestion, and the quinine increases this. It requires large doses of the remedy to produce any early result.

After convalescence is established the septenary periods must be watched. It is always well to continue some mild antiperiodic for two or three weeks.

For isolated symptoms and complications the usual measures employed in other fevers are admissible. It is useless to try heroic measures to regulate the fever. In some regions it is customary to attack it with ponderous doses of mercurials and quinine, but the complications that then arise in the nervous system become serious. As hitherto remarked, the fever tends to self-limitation, but when thrown out of its course seems to take a firmer hold upon the patient, and to be more grave. On general principles it may be said that medication should be directed primarily to the maintenance of open emunctories and the elimination of the *materies morbi* through them.

THE SURGERY OF THE THYROID GLAND.¹

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THE thyroid gland, like the spleen and the thymus and suprarenal glands, has no duct. Its function is not well understood.

In its normal condition it is described as consisting of two lobes situated on the sides of the trachea, and connected by an isthmus which overlies the second and third rings of the trachea.

In its histological structure (Schenk) it is com-

¹ Read before the Wisconsin State Medical Society, June, 1890.

posed of connective and elastic tissue so interwoven as to form numerous meshes in which are found closed vesicles. These vesicles consist of a homogeneous membrane, lined with cylindrical epithelia and filled with a clear albuminous fluid. The cylindrical epithelia are often found detached and floating in the albuminous fluid, or forming small aggregations in different parts of the vesicles. A fine meshwork of blood- and lymph-vessels surrounds each vesicle. The nerves supplying the thyroid are derived principally from the sympathetic, but also to some extent from the pneumogastric.

Although the thyroid in its normal condition has but two, or at most three lobes, one on each side of the trachea, and the third, the pyramid, connected to the isthmus, in its pathological state, associated, connected or disconnected lobules are sometimes found. These associated lobules are in form and consistence not unlike the lymph-glands. They are situated, according to Wölfler, in the space bounded below by the arch of the aorta, on the sides by the carotids, and above by the hyoid bone. Gruber divides the accessory thyroid glands into superior, inferior, and posterior. The first two groups he further divides into median and lateral. The superior are those lobules found between the upper edge of the thyroid isthmus and the hyoid bone. The lateral glands or lobules are those found between the hyoid bone and the clavicle, generally situated near or associated with the lateral lobes. Of especial interest are the posterior accessory glands, found beneath the thyroid, between the trachea and œsophagus or below the œsophagus.

The enlargement of the thyroid gland, producing what is usually called goitre, occurs sometimes before birth, frequently during childhood, more often at the age of puberty, and occasionally in later life. It may be confined to one lobe or to some part of it, or may affect the entire gland. It may be temporary, from congestion caused by valvular heart-disease, during the period of menstruation, at the time of confinement, or it may be permanent. The permanent cases are either benign or malignant. In the benign enlargement there is an increase of tissue of one or more of the component parts of the gland, but it retains the gland-structure. In the malignant enlargement the growth of tissue does not conform to the structure of the gland. It is an adventitious tissue, usually carcinoma or sarcoma, and occurs most frequently where goitre is endemic or epidemic.

In the formation of goitres three principal varieties may be considered, namely, the follicular, the fibrous, and the vascular. In the follicular variety the first step is an increase of the cylindrical epithelia lining the vesicles. This leads to a growth of the vesicle itself which finally divides, forming two. Thus, in this variety, there is not only an increase in size of

the vesicles, but also an increase in number. The vesicular goitre is soft and semi-fluctuating. Cysts are formed by the pressure of these vesicles producing absorption of the adjacent walls, thus converting many vesicles into one cyst. The fibrous form is produced by an increase of the connective tissue forming the framework of the gland, and which surrounds the vesicles. It may be increased to such an extent that the vesicles are almost entirely obliterated, and the gland feels hard and resistant.

In describing the vascular form it must be remembered that the thyroid gland is supplied by four, sometimes by five arteries; two superior thyroids from the external carotid, two inferior from the subclavian, and occasionally a middle thyroid from the innominate artery. These arteries enter the gland, divide and subdivide in the connective tissue, and finally form a network around each vesicle. The blood is returned by six veins. The two superior open into the internal jugular. The two middle make a connection with the thyroid circuit and open into the internal jugular. The two inferior open into the right and left innominate veins. In the vascular form of goitre the arteries may be especially enlarged—those on the surface as well as the branches which penetrate the gland-substance—giving it a strong pulsation which is often very noticeable on inspection. The veins are enlarged much oftener than the arteries—the so-called *struma varicosa*. The small veins in the glands become varicose, tortuous, and greatly enlarged. The veins on the surface are often enlarged into wide channels.

The cysts which are found in goitre, instead of containing the clear albuminous fluid natural to the vesicles, are often filled with a colloid substance, colorless, yellowish, or of a greenish color. It is thick and sticky, and contains "kernels" and epithelia, and, according to Virchow, is probably produced by a chemical change of the normal albuminous contents of the vesicles. The cysts may also be filled with blood, due to the rupture of a bloodvessel in the cyst-wall, generally caused by amyloid degeneration rendering the arteries inelastic and brittle.

Etiology.—Among the predisposing causes of goitre are age, and especially the period of puberty. The menstrual period and pregnancy are apt to lead to a swelling of the gland, which is at first only vascular, but which often results in an increase of connective tissue which is permanent. An increase of the circulation from nerve-irritation is also a cause, as seen in Basedow's disease. The blowing of wind-instruments, ascending mountains, lifting heavy weights, an imperfect return of the venous blood as in heart-disease (right side), may each be causative. It may be congenital. Some

countries are almost entirely free, while in others, especially in valleys lying between high mountains, as in parts of Styria, Tyrol, and Switzerland, goitre is endemic and often epidemic. In some valleys nearly every inhabitant is affected. Not only those who have always lived there, but also those who for a considerable time make their residence there. The disease often attacks whole garrisons of soldiers and schools. In these regions where goitre is so constant, idiots, mutes, and cretins form a large portion of the population. Individuals suffering from idiocy or cretinism generally have goitre.

In Styria the government has established a large hospital for cretins, which is full to overflowing, and yet only a small part of the cretins of the country are accommodated.

The cause of goitre in these countries has long and diligently been sought. The social relations, the air, the water, the telluric conditions have each and all been most persistently examined. The air influenced by the surrounding mountains and by moisture has been thought, at different times and by different observers, to have much to do with the production of goitre. The water, usually strongly impregnated with lime and magnesia, has had its adherents as a causative condition. The state of the soil, often saturated with moisture and impregnated with deposits from the overflowing mountain streams, has also had many adherents. Dr. Theodore Kocher, in 1883-84, in the Canton Berne, had the surroundings of 76,606 children between the ages of seven and sixteen years examined, with a view to determine, if possible, the cause of goitre. There was a most minute and searching examination made of the soil and water, and it was found that in regions where goitre was most frequent the soil was richest in organic material; that the inhabitants drank surface-water impregnated with organic matter and rich with microorganisms; that there were some families entirely free from goitre, and that these used water from meadow springs, nearly free from both organic matter and microorganisms. From these investigations his conclusions were that in these regions the cause of goitre was the organic matter of the drinking-water.

The actual cause of goitre in these regions is yet in doubt, but the theories advanced by Lücke, Klebs, and Bircher, that goitre is caused by a microorganism, have many followers. Thus far, however, their theories have not been substantiated.

Symptoms.—The growth of goitre is usually slow, and ordinarily produces no marked symptoms until it has attained a large size, when it may seriously impede respiration from pressure on the larynx or trachea. Lobules situated beneath the sternum, on the trachea, or between the trachea and œsophagus, are very apt to produce injurious pressure; or when

one lobe or part of a lobe is considerably enlarged, harm is produced by pressure on the side of the trachea.

Where the gland is much enlarged and the sternohyoid and thyroid muscles are rigid, they press the gland down tightly and thereby cause stenosis of the trachea. It is also held that by considerable and long-continued pressure on the larynx or trachea fatty degeneration is produced, making them pliable, and that by a sudden twisting of the gland a kink in the trachea may be produced, resulting in death from asphyxia. Pressure of the gland may produce paralysis of the vagus or of the recurrent laryngeal nerves with a fatal result. Billroth states that such deaths, resulting from goitre, are much more frequent than is generally supposed. Death may be produced not only by paralysis, but also by irritation of the nerves, causing spasm of the muscles of the larynx.

Stenosis of the œsophagus with difficult deglutition may also occur when a portion of the gland has grown between the œsophagus and trachea.

Pressure on the carotids may occur, producing anæmia of the brain, and on the jugular veins, causing a stasis of blood in the head.

Treatment.—The approved methods of treatment practised at the present time may be considered under five heads:

1. The use of iodine.
2. Electrolysis.
3. The treatment of cysts.
4. Ligation of the thyroid arteries.
5. Extirpation.

The treatment of goitre by iodine, externally, usually in the form of a salve, and internally by the administration of potassium iodide, has long been practised, and often with good results, especially in cases which have not attained a large size, and are not of long duration. Its action consists chiefly in causing absorption of the connective tissue, and its external use may also produce, in the superficial parts, inflammation, matting together, and consequent shrinkage.

The parenchymatous injection of tincture of iodine is followed by much better results. This was first recommended by Lücke, in 1867. It is especially applicable in cases of goitres which are soft and which involve only a part of the gland.

In advanced age a goitre usually undergoes degeneration, becomes hard from the deposit of lime salts; or large cysts with rigid walls are formed. In these cases injections are useless. Practised with strict anatomical and antiseptic precautions injections are attended with but little danger. Still there have been cases with great difficulty of respiration, and even death following the procedure. Bruns ascribes death, in some cases, to paralysis of the

vagus. In other cases suppuration has followed, and in still others the injection has entered one of the large veins, producing thrombus.

Dr. Heymann has collected the records of sixteen deaths from parenchymatous injection, but these unfortunate results are so very rare that they may almost be disregarded. In making the injections the strictest antiseptic precautions should be observed—the syringe carefully cleansed either by heat or by carbolized solution, and the patient's neck well washed with a carbolized solution. Avoiding any large veins that may be on the surface of the gland, the needle is thrust directly into some enlarged portion, care being taken first to fix the part with the thumb and finger, then one-third or one-half of a syringe-ful is slowly thrown in. The injections are practised usually twice a week, but the frequency and the amount of iodine injected are governed by the degree of reaction. Generally after one or two injections an entire syringe-ful can be used, selecting a new point where the gland is soft. Before the injection is finished, or immediately afterward, the patient complains of severe pain in the teeth, eye, ear, or in the maxillary articulation, always on the side on which the injection has been made. If the injection has been made low down near the sternum, the patient will complain of severe pain in the chest, and there may be for a time difficult breathing. In over-sensitive girls this pain may continue for several hours. The injections produce an inflammation in the substance of the gland, matting the tissues into a hard lump which causes shrinkage at that point. Its specific alterative effect is also considerable.

CASE I.—Annie H., aged eighteen years; enlargement of both lobes of thyroid, which had been noticeable for two or three years. A neck-chain that she formerly wore, would not clasp by an inch; the gland was soft. Four injections were made, two on each side, at intervals of three days. This reduced the gland to two hard nodules, and she could again wear the neck-chain.

CASE II.—Annie R., aged twelve years; enlargement of both lobes of thyroid, but especially of the right. Enlargement was very marked and produced a feeling of suffocation. Eight injections were made, when the visible swelling had almost entirely disappeared and only some hard nodules could be felt.

The foregoing has been substantially the result in a large number of cases in which the injections have been used, and in no case have unpleasant results followed any of the injections. It would seem that in this part of the country, where goitre is sporadic, few if any cases would attain considerable size if timely injections were practised. Substances other than iodine have been used, such as diluted alcohol, solutions of ergotin and of arsenious acid, and iodoform emulsion, but none of them has been found

to produce such uniformly good results as iodine, while the injection of some has led to the production of suppuration.

Electrolysis.—Mr. John Duncan¹ gives the results of treatment of this method in fourteen cases of goitre. Six were entirely cured, and the others more or less benefited. Weimbaum reports two cases cured by electrolysis. This method of treatment promises well, and is practised by using a galvanic current of from six to eight cells. The electrodes are needles, which are thrust into the gland and moved about in its substance. The sitting is maintained for from ten to fifteen minutes.

In long-standing goitre cysts may occur. In some cases there will be but one cyst, in other cases many. They are formed by the enlargement and coalescence of the original vesicles. As the vesicles enlarge they are closely pressed together, their adjacent walls become absorbed, and a large cyst may be formed from many small ones. In old cases the walls of these cysts are often thick, rigid, and infiltrated with lime salts.

There are three methods of treating the cysts usually recommended:

- 1st. Puncture and the injection of iodine.
- 2d. Incision.
- 3d. Enucleation.

Puncturing a cyst with a canula, and injecting iodine, is the simplest method, and can be practised with success in single cysts, with thin walls. Where the cyst-walls are firm, or where several are in close conjunction, incision offers better results.

Incision should be done under strict antiseptic precautions, cutting down to the cyst-wall, which is stitched to the skin before opening (Koenig). The cyst is then incised to the full extent of the external wound, irrigated with a carbolic acid solution, and drained. If there is much bleeding from the cyst-wall the cavity should be packed with iodoform-gauze. Healing is not so certain as after the old method of leaving an open, suppurating, granulating wound, but it is far less dangerous.

In cysts with thick, rigid walls, or containing much solid matter, enucleation is to be preferred. This is performed by making an incision down to the wall, and then shelling out the cyst with the fingers, with closed scissors or with dressing-forceps. The cavity is then irrigated and drained, and an antiseptic dressing applied.

CASE III.—Mrs. H., aged thirty-four years; sought relief from a cyst of the right lobe of the thyroid, near the median line. There had been a gradual enlargement for several years, which at the time of the consultation was the size of a small apple. Its walls were thin, and the cyst superficial. After thoroughly cleansing the region, a small trocar was

¹ British Medical Journal, November 3, 1888.

thrust into the cyst, its contents, a thin albuminous fluid, were allowed to drain off, and half a drachm of tincture of iodine thrown in through the canula and allowed to remain. The reaction was slight, and complete obliteration of the cyst followed.

CASE IV.—Maggie H., aged twenty-four years; consulted me on account of a cyst of the thyroid, directly over the trachea. The cyst had been growing for four or five years, and was the size of a small hen's egg. The patient was anaesthetized, the parts carefully cleansed, and an incision made directly over the cyst and down to its wall, when it was easily shelled out. The pedicle containing the bloodvessels was ligated with antiseptic silk and an antiseptic dressing applied. Healing occurred by first intention.

In order to avoid the misfortunes and dangers which have sometimes attended or followed extirpations of goitre, Wölfler, during the last few years, has revived the operation of ligating the thyroid arteries. In his monograph, published in 1887, on the history of goitre operations, he gives Walther (1814) the credit of first ligating the superior thyroid arteries for the purpose of producing atrophy of the gland, and to Porta (1850) the credit of first ligating the four thyroids for the same purpose, with successful results. The number of cases to which the operation is applicable seems limited. Billroth¹ states that the operation should be performed only in cases of goitre that are well nourished. In cases in which degenerative processes or large extravasations of blood have taken place, in which the goitre is largely cystic with thick, firm walls, or in which there is a deposit of lime salts in the tissues, the operation is contra-indicated. The operation is applicable to much the same class of cases as are the parenchymatous injections. Performed under strict antiseptic precautions the operation should be practically free from danger, though often difficult, and in well-selected cases it seems probable that it may take the place of the more radical and dangerous operation of extirpation.

The superior thyroid arteries are the first branches given off from the external carotids. In tying them, an incision two inches long is made at the anterior border of the sterno-cleido-mastoid muscle, with the middle of the incision over the space between the thyroid cartilage and hyoid bone. The integument, superficial fascia, and platysma myoides are divided, the deep fascia torn through with dissecting-forceps, or divided on a grooved director. When the operator reaches the artery, it should be ligated in two places with imbedded aseptic silk sutures.

In tying the inferior thyroid Billroth recommends an incision at the posterior border of the sterno-mastoid muscle, the incision terminating an inch above the superior border of the clavicle. The skin and platysma are cut through, tying any veins, with

two ligatures, that may be in the line of the incision, before cutting them. When the deep fascia is incised one comes directly upon the scalenus anticus muscle with the phrenic nerve coursing down its centre. This is the deep landmark of the region. Then, by raising the border of the sterno-mastoid muscle and separating the connective tissue, the inferior thyroid artery is reached.

In this incision the operator does not see the origin of the artery, and in order to be sure that the vessel is the one desired it should be traced upward, when it will be seen to curve under the common carotid artery. For greater security the artery should be ligated in two places and incised.

CASE V.—Mrs. D., aged twenty-seven years. At the age of nineteen she first noticed a slight fulness and pulsation in the neck. The increase in size was gradual until she became pregnant, four years after first noticing the enlargement. During this and a subsequent pregnancy the increase was rapid; there was much difficulty in respiration, which was noticeable at all times, especially at night, when it was necessary for her to be propped up in bed. She was also almost constantly troubled with a hoarse, croupy cough. The gland pulsated strongly in every part. Her neck measured above the gland 34 centimetres, and over the greatest enlargement 48 centimetres.

August 22, 1889. The four thyroid arteries, excepting the right inferior thyroid, were tied at one sitting in the usual manner. In the region of the right inferior thyroid the gland extended so far beneath and beyond the external border of the sterno-mastoid muscle that it was feared great difficulty might be experienced in reaching the artery; consequently an incision was made one inch above and parallel with the clavicle, incising integument, platysma, and deep fascia. The anterior border of the sterno-mastoid being forcibly raised with the index-finger and the deep connective tissue torn open, I easily came upon the first portion of the subclavian artery, doubly ligating and dividing the middle thyroid vein which crossed the deep part of the wound. The thyroid artery was then exposed and doubly ligated. The artery was very large—the size of a large goose-quill. All pulsation in the gland had now ceased; it felt like a sponge saturated with water and could be easily emptied. The wounds were irrigated with bichloride solution, drained and united with a continuous silk suture. A very heavy antiseptic dressing was applied, extending well down on the chest, the bandage encasing not only the neck, but the head and chest as well, in order that the muscles of the neck would be at rest. The dressing was changed on the seventh day, the tubes and sutures removed, and complete union found. The cough and difficult breathing were completely relieved, and thus far there has been no return. The gland decreased to about one-half of its original size, when it remained stationary.

Extirpation.—Perhaps no operation in surgery has had a more varied experience than extirpation

¹ Wiener klinische Wochenschrift, No. 1, 1888.

of the thyroid—at times recommended by some of the best surgeons and strenuously opposed by others equally good.

In 1791 Desault made the first successful extirpation of one-half of a goitre, and in 1800 Hedenus made two total extirpations, both successful (Wölfler). Still, the operation was, perhaps, justly condemned, and it was not practised to any extent until the advent of antiseptic surgery. In 1875 Küster made the first extirpation with strict antiseptic methods.

In 1877 both Albert and Billroth extirpated goitre under antiseptic precautions. From this time the operation became more popular. The favor with which it was now held was not entirely due to the antiseptic precautions, but perhaps quite as much to a better technique.

As illustrating the disfavor in which the operation was formerly held I quote the following from Gross's *Surgery*:¹

"But no sensible man will, on slight considerations, attempt to extirpate a goitrous thyroid gland. If a surgeon should be so adventurous or foolhardy as to undertake the enterprise I shall not envy him his feelings while engaged in the performance of it, or after he has completed it, should he be so fortunate as to do this. Every step he takes will be environed with difficulties, every stroke of his knife will, if he is not perfectly self-possessed and most cautious, be followed by a torrent of blood, and lucky will it be for him if his victim live long enough to enable him to finish his dissection."

This would perhaps be as true now as then, were it not for better methods of operating. There were formerly two great dangers attending extirpation, namely, hæmorrhage and suppuration. These two sources of danger are now happily almost wholly under control.

In the experience of surgeons who have had most to do with this operation other difficulties also have followed, namely, tetany and cachexia strumipriva. If tetany occurs it is usually on the day following the operation. There are at first pains in the extremities, which are soon followed by muscular spasms in the legs. The upper extremities are also soon affected, as well as the muscles of the face. These tonic muscular contractions may be of short duration, the patient quickly recovering, or they may continue for an indefinite period, reducing the patient very much or even leading to death. In Billroth's first seventy cases of extirpation, tetany occurred seven times (Wölfler). The cause of tetany in these cases is not well understood, but it is thought to have some connection with impoverished blood, and perhaps it is excited by irritation of the recurrent laryngeal nerve. Dr. James Stewart² affirms that tetany never occurs unless the entire gland has been removed.

What is of far more serious import is cachexia strumipriva. This condition has been especially observed in Switzerland (Reverdin and Kocher). It generally occurs during the first month after the operation. There is general disturbance of nutrition, loss of flesh, and muscular weakness. The mind is benumbed, the lips and tongue and eyelids swollen, and difficulty of speaking occurs. This condition is one of cretinism and is lasting, but occurs only when the entire gland has been removed, and more especially in young persons. So uniformly has this been the case, that it has become a rule never to extirpate the entire gland before puberty. If even a small portion of the gland is left the cachexia does not occur. In persons past the age of puberty the condition is not apt to occur even after complete extirpation.

Schiff has advanced the opinion that the thyroid gland has a regulating function on the circulation in the brain, and that after complete removal the marasmus is produced by chronic anæmia of the brain.

The most approved method of operating at the present time is that of Kocher and Billroth. According to Wölfler, these two surgeons have removed more goitres than any other two men in the world. An incision is made in the median line, from near the sternum to the hyoid bone, and if necessary it may be extended on either side, or on both sides, in the form of the letter Y, to the sterno-cleido-mastoid muscles. The anterior jugular vein, and perhaps the external jugular, may be under the line of the incision; if so, they should be doubly ligated and incised. In separating the tissues it will be found necessary to touch the sterno-hyoid and omo-hyoid muscles if the gland is large. When the capsule of the gland has been reached the knife should be laid aside and all tissue doubly ligated *en masse* before being cut. The dissection is made with dissecting-forceps and with the fingers, the gland being shelled out first at the superior border of one side. Reaching the superior thyroid vessels, artery and vein, they are doubly ligated and incised; the dissection is carried down the same side until the inferior thyroid vessels are reached, which are also doubly ligated and cut. The greatest care should be exercised in this region not to injure the recurrent laryngeal nerve. The dissection is now carried below, tying the middle thyroid vein and artery, if the latter exists, separating the gland from the trachea, and ligating any vessels that may be found. The goitre is then lifted from its bed and the vessels on the opposite side ligated. The wound is irrigated and drained, united with a continuous silk suture, and a large antiseptic dressing applied.

In this operation one of the most important considerations is the prevention of hæmorrhage, and

¹ Edition of 1872, page 431.

² American Journal of the Medical Sciences, November, 1889.

the advice of Billroth on this subject should never be forgotten; namely, that when the capsule of the gland has been reached, lay the knife aside and doubly ligate all tissues before cutting them.

CASE VI.—G. D., aged twenty-four years, first noticed the neck enlarging five years ago. Numerous attempts were made to check the growth by the external application of iodine, but with no effect. The increase in size was continuous. In August, 1889, both lobes were found very much enlarged. Some difficulty in respiration was experienced and great inconvenience felt on account of the increased size of the neck in wearing a collar. The gland felt firm and hard to the touch. August 13th, extirpation was performed. Great difficulty was experienced in separating the overlying tissues from the gland, as they were matted together in consequence of the iodine applications; and in making the separation a cyst the size of a large crab-apple was broken into. After the gland was freed from the overlying tissues, little difficulty was experienced in shelling it out. The vessels were ligated as they appeared the wound was irrigated, drained, and united with a continuous silk suture, and a heavy antiseptic dressing was applied. On the eighth day the dressings were changed and the wound found united throughout. Patient has remained perfectly well up to date.

**AN ANALYSIS OF THE OCULAR SYMPTOMS
FOUND IN THE THIRD STAGE OF GENERAL
PARALYSIS OF THE INSANE.¹**

BY CHARLES A. OLIVER, M.D.,
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THESE observations and their deductions, which form a part of, and in fact conclude those which were presented to the American Ophthalmological Society at its last annual meeting, are here given in hope of offering a few more facts to the ocular symptomatology of general paralysis.

Care was taken that each subject was seemingly free from any gross extraneous disease or local disorder, and discretion was exercised that competent and authoritative medical opinion had been given as to the type and stage of the general complaint; also, for reasons given in the previous paper, the study has been limited to the male sex.

In a disease of such complex symptomatology, where doubtless quite a number of pathological peculiarities exist at one time, accurate pathognomonic changes cannot be expected in each case, and for this reason a great number of seemingly similar cases have been studied in the effort to obtain an idiocratic picture of a few of the oculo-motor and retinal changes to be found in this disorder. However, as the disease seems, as shown by the microscope, to expend its greatest force upon both the

motor and sensory regions of the cerebral cortex, with involvement of the related higher mental areas, the symptoms which are improperly described as paretic only, assume types of both motor and sensory derangement, with associated mental peculiarities of a distinctive character. As a part of these, the ocular apparatus, with its six channels on each side to the cortex of the brain, becomes not only a useful situation from which to study these changes, but is really invaluable as an exponent of the intracranial changes.

*Observations.*¹—1. Direct vision for form was reduced in every instance where obtainable to any degree of certainty.

2. Direct vision for color was subnormal in the few instances in which it could be properly studied, showing itself more particularly for green and red.

3. Accommodative action: though impossible to obtain any reliable results by various subjective methods, yet by objective means (retinoscopy) this was seemingly lessened in every unequivocal case tried.²

4. Visual fields: no determinate answers could be obtained.

5. Pupils, as a rule, were somewhat larger than normal.

6. Pupils were oftentimes unequal in size, and, in some instances, had a difference of one or two millimetres in their longer diameters.

7. Pupils were frequently oval and ovoid in shape; their long axes being opposed to one another or placed at equivalent angles.³

8. The pupillary border of the iris in several instances was quite irregular in outline, without any evidences of localized inflammatory change.

9. Changeability of pupillary form still persistent in one case in which it had been so noted in the second stage of the disease.

10. Irides were devoid of any gross peculiarities in comparative tint.

11. Irides, as a rule, were either extremely slow in response or absolutely immobile to the strongest light-stimulus, though fairly responsive to efforts for convergence and accommodation.

12. The iris of the larger pupil, in some instances, was not so responsive to light-stimulus as its fellow, this inequality of action seeming to bear no relation to the degree and character of refraction-error, and, in some cases, seemingly free from the apparent amount of optic-nerve change.

¹ A portion of the observations will form a part of the Fifth Annual Report of the Ophthalmological Department of the State Hospital for the Insane at Norristown, Pa.

² Curiously, one case upon several occasions gave distinct ophthalmoscopic evidence of spasm of accommodation.

³ It must not be forgotten that the pupils of many of the mentally healthy present similar characteristics, especially in cases of astigmatism, where asthenopia is complained of.

¹ Paper read before the American Ophthalmological Society, July 17, 1890.

13. The secondary movements of the iris were almost, if not entirely, lost in all instances in which light-stimulus produced a reflex act.

14. Irides, in quite a number of cases, were very feebly responsive to efforts for accommodation and convergence only; the want of this character of action being very changeable and unequal at the same time upon the two sides.

15. Irregular and incomplete dilatation of the pupil followed the employment of strong solutions of atropine—sufficient to give full mydriasis in ordinary subjects—the comparative positions of the greatest amounts of pupillary enlargements being unequally situated at fifteen and thirty degrees differences, although several cases yielded peculiar and fantastic forms.

16. Insufficiency of the interni was noted in several cases, though on account of the mental condition of the subject nothing could be positively determined.

17. Ataxic nystagmic motions of the extra-ocular muscles were present at times in a few cases, especially noticeable with the third and sixth nerve distributions, either in separated or conjoined action.

18. The optic disks, in many instances, were decidedly and unequally semi-atrophic, the degeneration being especially pronounced in the deepest layers and on the temporal side of the nerve.

19. The capillarity of nerve-substance was materially lessened, the greatest amount of blood-supply being recognized in a rather narrow crescentic area on the nasal side of the disk.

20. The disk, in a few cases, was of a suffused and gelatinous appearance, its edges being plainly seen, and the surrounding retina somewhat oedematous.

21. A series of minute venous and arterial loops in the retinal vessels on the disk were seen in one well-marked case.¹

22. The scleral ring was sharply cut all around and quite broad; this, as a rule, being more noticeable on the temporal side of the disk.

23. Blackish crescents of pigment, broken and somewhat absorbed beyond the scleral ring, at the outer edge of the optic-nerve head, were frequent.

24. Pigment-lines of different widths and varying degrees of absorption were seen beyond the scleral ring at the inner edge of the optic-nerve head.

25. The pigment-layer of the retina was, as a rule, diminished in thickness, the greater amount of striation being seen at the superior and inferior borders of the optic disk.

26. Retinal striation, in a few instances, was very pronounced, rendering the disk-edges quite hazy.

27. Retinal arteries were reduced in size and sometimes slightly tortuous.

28. Retinal veins were somewhat undersized and quite tortuous in a number of cases.

29. Blood-currents of the retinal vessels were apparently normal in tint.

30. Very few lymph-reflexes were seen, these being generally situated in the walls of the main retinal stems.

31. Fine pin-point opacities in the retina between the disk and the macula were seen in two cases; no other gross changes in the retina.

32. The choroid was granular and disturbed in the majority of cases.

33. Refraction was generally hypermetropic, with a marked degree of astigmatism.¹

Summary and Conclusions.—1. The oculo-motor symptoms of the third stage of general paralysis of the insane, which consist in varying, though marked degrees of loss and enfeeblement of iris-response to light-stimulus, accommodative effort and converging power; lessening of ciliary muscle tone and action; weakening and inefficiency of extra-ocular muscle motion—all show parietic and paralytic disturbances connected with the oculo-motor apparatus itself, of greater amount and more serious consequence than those seen in the same apparatus during the second stage of the disease.

2. The sensory changes of the third stage of general paralysis of the insane, which, though similar to those found in the second stage of the disorder, are so pronounced as to show a semi-atrophic condition of the optic-nerve head and marked reduction in the amount of both optic-nerve and retinal circulation, with consequent lowering of centric and excentric vision for both form and color—all indicate a degenerate condition of the sensory portion of the ocular apparatus, with impairment of sensory nerve action.

3. The peculiar local changes seen in these cases, which consist in conditions of the choroid and retina indicative of local disturbance and irritation of these tunics, more pronounced than those seen during the second stage of the disease—all represent the results of greater wear and tear given to a more delicate and a more weakened organ.

4. Both the motor symptoms and the sensory changes of the ocular apparatus, as thus described in the advanced or third stage of general paralysis of the insane, furnish not only evidences of a local disturbance of a more pronounced type than those shown in the second stage of the disorder, but plainly show themselves as one of the many peripheral expressions of fast-approaching degeneration and dissolution of nerve-elements most probably connected with related cortex-disintegration and death.

¹ Acquired syphilis was suspected in this case.

¹ Thanks are due to Drs. Henry Sidebottom and Henry C. Cattell for their kind assistance during the study of these cases.

CLINICAL MEMORANDA.

SURGICAL.

Abscess of the Liver. Operation; Recovery.—T. R., aged twenty-seven years, laborer, entered the Philadelphia Hospital, August 16, 1889, suffering from fever and severe pain in the side. He stated that he had always enjoyed good health, with the exception of an attack of jaundice from which he suffered for six weeks when in his sixteenth year. During May last, while much exposed, he contracted dysentery. This became severe in type and confined him to his bed for two weeks. He resumed work before recovery was complete, suffering from occasional bloody stools for nearly two months. About the first of August he experienced considerable pain over the right iliac crest. The bowels were at this time costive. Shortly afterward he noticed a tumor in the region of the liver. At no time were there chilly sensations. His symptoms steadily grew more pronounced until he entered the hospital.

On admission the temperature was 103°, the pulse 100, the respiration 30. The liver-dulness extended three inches below the ribs in the liver-line, forming a distinct tumor visible on inspection and tender on palpation, but showing no signs of fluctuation or superficial cedema. Auscultation failed to detect friction-sounds. Rectal examination showed the absence of any accessible ulcerating foci. The following day the temperature reached 104°, and the general condition of the patient had markedly altered for the worse. An operation for the evacuation of pus was at once performed. An incision three inches in length was made over the most prominent part of the tumor. The abdominal muscles were divided to the full extent of the wound down to the peritoneum, and the cavity of the latter was opened just below the tumor. The tumor at its most prominent part was found to be firmly adherent to the peritoneum. The opening into the general cavity was protected by a sponge and the point of the knife was thrust through the adhesions into a liver-abscess the size of a large orange. By means of the finger passed into this cavity, the walls of two other abscesses were broken through and about a pint of thick, bile-stained pus was evacuated. Two large drainage-tubes were carried to the deepest parts of the suppurating cavities, the wound was washed out with sterile normal saline solution (0.7 per cent. sodium chloride) and the wound was closed. The patient was under ether for thirty minutes. On the following day the temperature dropped to normal, and the subsequent course of the case was one of uninterrupted recovery, with the exception of a small stitch-abscess which developed on the fifth day and sent the temperature up to 101°. In two weeks the drainage-tubes were removed, the discharge having entirely ceased, and in three weeks the patient was sitting up. His subsequent history shows that he has enjoyed robust health and has never suffered from any trace of his liver trouble.

It is interesting to note in this case that, although the suppurative trouble was immediately due to septic emboli carried from ulcers of the lower bowel; the operation was successful in evacuating all abscess-cavities of the liver. A study of many autopsies shows that such abscesses are generally multiple, the liver frequently

being completely riddled and destroyed. Indeed this is so frequently the picture that many pathologists advise against operation in these cases, maintaining that the trouble is so disseminated as to be beyond the help of the surgeon's knife. Though the abscesses were multiple in the case reported, they were separated from each other by such thin walls that the latter were readily broken down. Even had this latter procedure not been deemed advisable, it is more than probable that in one or two days at the most these remaining collections of pus would have ruptured in the direction of least resistance, thus spontaneously evacuating their contents.

A month after operation a blood-count was made to see whether such extensive destruction of liver-tissue had any effect upon the number of corpuscles. The latter seemed normal in color, and as a result of repeated observation gave an average number of 4,000,000 to the c.mm., a percentage not lower than could be reasonably expected after a month's stay in a crowded hospital-ward.

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RHINOLOGICAL.

Anosmia from Tobacco-poisoning.—Tobacco-amblyopia is now a well-recognized disease, and is daily becoming a more familiar example, and an alarming evidence, of the growing abuse of tobacco-smoking.

A recent case leads us to believe that the nerve of smell as well as, though less frequently than, the nerve of sight, is sometimes injured by excessive smoking. Reference has been made to many of the standard works on the subject of anosmia, and various are the causes which are said to produce it. In the order of their frequency syphilis, traumatism, catarrh, obstruction of the nares, strong fumes, and malaria are enumerated, but we are unable to find that tobacco is held responsible for the loss of smell. This fact leads us to bring to the attention of the profession what we believe to be a case of tobacco-anosmia.

In March, 1890, Mr. A. S. F. applied for treatment, and stated that about a year ago he began to suffer from dryness of the post-nasal region and a disposition to clear his throat. Then he noticed a feeling of fulness or stuffing in his nose and a slight difficulty in nasal respiration, sometimes in one nostril, and, again, in the other. Lately he had observed that he had lost the sense of smell.

There was no specific history. He was, however, an inveterate smoker, and was in the habit of blowing the smoke through his nostrils.

Examination showed pharyngitis and an atrophic rhinitis. His sight was also slightly impaired, and this led us to suppose that tobacco was the cause of the condition.

This diagnosis subsequently proved correct, as was conclusively proven by the cure of the disease by removing the cause.

The treatment consisted mainly in total abstinence from tobacco-smoking, the administration of one-thirtieth grain of strychnine three times a day, and in the application of electricity to the nasal mucous membrane by means of a pledget of wet cotton on the end of an elec-

trode. In about a month the power of smell began to improve, and when last seen and tested he could recognize almost any moderately strong odor.

The effect of tobacco on the eye is known to be an atrophic condition of the optic nerve resulting in amblyopia; hence it is an organic disease.

Now the sense of smell, though primarily dependent on the olfactory nerve, is secondarily dependent on several conditions, the most important of which are moisture and an unobstructed nasal passage.

Hence, anosmia may be either organic or functional, and tobacco-poisoning is, in our opinion, capable of producing either, or both. The anosmia is functional, when we have an interference with the secondary conditions necessary for the sense of smell; organic, when we have the nerve sensibility destroyed by atrophic changes.

From personal experience and from actual observation and inquiry, we are convinced that smoking is especially injurious to the nasal and post-nasal fossae, and that by it the sense of smell is apt to be impaired, and may be destroyed.

EDWARD F. PARKER, M.D.

CHARLESTON, S. C.

MEDICAL PROGRESS.

Aristol in the Treatment of Skin Diseases.—In a letter to the *Journal of Cutaneous and Genito-urinary Diseases*, September, 1890, DR. L. BROcq, of Paris, communicates some of his results with aristol in the treatment of cutaneous diseases. In his experience the drug acts only as a cicatrizing agent. In chancroid its use does not seem to exert a favorable influence on the virulence of the disease. In tertiary syphilitic ulcerations it apparently hastens cicatrization, provided that appropriate general treatment with mercury and potassium iodide is also used. Cicatrization in tuberculous diseases of the skin is also hastened by applications of aristol. Applied to non-ulcerated lupus vulgaris or erythematous lupus, it exercises no useful influence. In tuberculous ulcerations of mucous membranes it is useful, and by means of it Dr. Brocq was able to secure cicatrization of an extensive tuberculous ulcer of the arch of the palate. In superficial epithelioma aristol does not seem to exert any destructive influence on the pathological cells; but, if the growth has been destroyed by caustics, by curetting, or by the hot iron, the drug hastens cicatrization. The author's method of treating this disease is to curette the base thoroughly, and if he believes that the diseased tissue is completely removed, to dress with aristol. If the disease is apparently not completely removed, he applies potassium chlorate, either in powder or solution, for a few days, and then uses aristol.

In the treatment of psoriasis, aristol has given the author scarcely appreciable results. To test its value thoroughly in this disease, he has treated all his cases with aristol on one side of the body, and with the ordinary applications on the other.

In no instance has Dr. Brocq seen aristol produce toxic symptoms.

Incision and Drainage in the Treatment of Hydrocephalus.—PORT (*Der Kinder-Arzt*, August, 1890) reports the

case of a child, four weeks old, with marked hydrocephalus, in which he punctured the skull and drew off ten ounces of fluid. The psychical symptoms immediately improved, though for only a short time, and in twenty-four hours the fluid had re-accumulated, distending the skull to its former size. The author then made an incision through the lower third of the right frontoparietal suture, inserted a drainage-tube, and applied a compressing bandage to the head. The child at first improved, but died on the twelfth day after the operation. At the autopsy both lateral ventricles were found full of fluid, and, as there was no communication between them, the evacuation of one had not reduced the fluid in the other.

Methods of Disinfecting the Hands.—GEPPERT (*Centralblatt für die medicinische Wissenschaften*, July 26, 1890) advises the following method of disinfecting the hands previous to operating: Cover the hands with a paste made by mixing 100 parts of powdered chloride of lime with 45 parts of water. Then dip them for a few moments in a three-per-cent. watery solution of hydrochloric acid. Or, in place of this, the hands may be alternately dipped into a chloride of lime solution and three-per-cent. hydrochloric acid solution.

MIKULICZ (*Der Frauenarzt*, August, 1890) disinfects his hands by first cleaning the nails, then scrubbing the hands for three minutes with potash soap and water, soaking them for half a minute in a three-per-cent. carbolic acid solution, and finally washing them off with a 1-to-200 sublimate solution.

Prognosis in Extravasation of Urine.—According to DR. J. BLAKE WHITE (*Journal of Cutaneous and Genito-urinary Diseases*, September, 1890), the prognosis of operations in cases of urinary extravasation can be estimated as follows:

1. Should the infiltration not have extended beyond the perineal structures before operation, the prospects of recovery are favorable.
2. Should the infiltration have involved the scrotum and the perineal structures, the operation, though affording the best chances of recovery, is not without hazard.
3. Should the infiltration extend into the perineum and scrotum, and involve also the ileo-abdominal region, the danger to the patient is greatly increased.
4. Should the infiltration descend to the ischio-rectal space, the prospects are exceedingly gloomy, since it threatens deep-seated sloughing, and, in consequence, profound shock.

Large Doses of Potassium Iodide in Tertiary Syphilis.—WOLF (*Revue de Thérapeutique*) administers potassium iodide in doses of from 450 to 750 grains daily to obstinate cases of tertiary syphilis. The drug is dissolved in a decoction of rice in order to prevent iodism, any free iodine formed in the stomach being immediately converted into iodide of starch.—*London Medical Recorder*, August, 1890.

The Diazo-reaction in Diagnosis.—DR. L. RÜTIMEYER, who has made between two and three thousand trials of the so-called diazo-reaction in the urine from 260 patients,

believes that it is a very useful guide, both in diagnosis and prognosis, being especially valuable in phthisis and typhoid fever. In phthisis he regards it as denoting the absorption of caseous matter, and, when it is persistent, as implying rapid mischief and an early and fatal termination. In cases of general miliary tuberculosis it was always obtained. A large number of typhoid cases were examined and the presence of the reaction was very constant, and could generally be obtained early. It does not seem to be present in pyrexial intestinal catarrh.

In the diagnosis of typhoid fever, if the reaction is not obtained during the first or second week, the case, if typhoid at all, must be a very slight one. It cannot, however, be affirmed that a well-marked and constant diazo-reaction is a sign of a fatal termination, as with phthisis.

The reaction is never given by the urine of healthy persons, and was not observed in hysteria, hepatitis, diabetes, cystitis, pyelo-nephritis, gastro-abdominal catarrh with fever, or in a number of surgical diseases. It was occasionally present in cancer of the stomach and œsophagus, chronic nephritis, caries of bone, pyæmia, scarlatina, pleurisy with serous effusion, tubercular meningitis, and heart disease. It was more frequently obtained in croupous pneumonia.

The method of testing is very simple, two special solutions only being required, namely, a concentrated solution of sulphanilic acid in water, and a solution of nitrite of sodium of the strength of 1 to 200. The actual test-solution is prepared immediately before use, by mixing 200 parts of the sulphanilic acid solution with 10 of pure hydrochloric acid and 6 of the nitrite of sodium solution. This mixture is added to an equal volume of the urine, and sufficient ammonia added to render the whole alkaline. A bright or carmine-red coloration denotes the diazo-reaction. After from twelve to thirty-six hours a deposit occurs, the upper part of which is green or black.—*Lancet*, August 23, 1890.

Local Anæsthesia by Means of Carbonic Acid.—According to VOITURIEZ, the anæsthetic effects of carbonic acid, described by Brown-Séquard, can be obtained in an extremely simple manner by means of the ordinary siphons containing mineral water charged with the gas. The anæsthesia is secured by projecting from a distance the contents of two or three siphons of seltzer water, limiting the application to the part to be operated upon. The insensibility to pain lasts about five minutes and then slowly disappears. The method is chiefly applicable to the limbs, as about the head and trunk the irrigation is somewhat inconvenient.—*London Medical Recorder*, August, 1890.

Gargle for Tonsillitis.—The following prescription for the treatment of tonsillitis is quoted by the *Canada Medical Record*:

R.—Ammoniated tinct. of guaiac } of each 4 drachms.
Compound tinct. of cinchona }
Potassium chlorate 2 "
Honey 4 "
Powdered acacia q. s.
Water . . . sufficient to make 4 ounces.—M.

Use from one-half to one teaspoonful as a gargle every two hours.

Mixture for Irritable Bladder.—DR. W. P. CHUNN uses the following mixture in the treatment of vesical irritation when due to excess of phosphates in the urine:

R.—Benzoic acid 2 drachms.
Borax 3 "
Water 12 ounces.—M.

Dose: One teaspoonful three times daily.—*Canada Medical Record*.

Eczema.—According to *L'Union Médicale*, LUSTGARTEN recommends the following application for eczema:

R.—Oleate of cocaine 10 to 15 grains.
Lanoline 3 drachms.
Olive oil ½ drachm.

This is to be made into an ointment, and will be found particularly useful in eczema of the anus and genital organs. Two applications a day are to be made, and followed by dusting the parts with dry absorbent powders. If there is much secretion, with the formation of scabs, warm baths may be used and the foreign materials removed by either mild or strong soaps, as the case may require. In cases of pruritus of the anus, Lustgarten recommends suppositories of the oleate of cocaine.

Formula for Pulmonary Phthisis.—GILBERT recommends the following:

R.—Creasote 30 to 45 minims.
Arsenate of sodium ½ grain.
Quinine wine 1 pint.

Two small wineglassfuls should be taken directly after each meal.

Treatment of Herpes of the Genitals.—FEULARD, in *L'Union Médicale*, states that where the eruption of herpes of the genitals is widespread but not severe, lotions with pure water, vinegar and water, or aromatic wine are useful, and that the small ulcers may be covered with powdered bismuth, talc, or starch. If the ulcers be severe, he recommends that they be touched with a feeble solution of nitrate of silver of the strength of from 4 to 10 grains to each 6 drachms of water; or, in place of this, the same quantity of the silver salt in the same amount of vaseline. In those cases in which there is a tendency to recurrence, it is necessary to place about the glands or under the prepuce a small piece of absorbent cotton, or similar substance, laden with tonic astringent applications.

Where the herpes is idiopathic and depends upon digestive disturbance, he recommends the use of an emetic, the employment of non-exciting foods, abstinence from alcohol, and the use of alkaline waters.

The Analgesic Action of Methylene-blue.—According to EHRLICH and LEPPMANN, in painful effections of the nerve-trunks methylene-blue possesses marked analgesic properties. The action is usually manifested about two hours after the administration of the remedy, and, if given in sufficient amounts, increases in intensity until the analgesia is absolute. The dose required to produce complete anæsthesia is 1 grain hypodermically or 2 to 4

grains if given by the mouth. In some cases as much as 15 grains in gelatin capsules was given daily without causing any toxic symptoms or disagreeable effects. For hypodermic administration they employed a two-per-cent. solution, which occasioned no pain and no local reaction other than a slight tumefaction which disappeared within a few days.

The authors have not discovered that the drug has any effect upon inflammatory swellings, nor were its effects very evident in the osteocopic pains of syphilis or the pain of gastric ulcer.—*Therapeutic Gazette*, August, 1890.

Hypnotism as a Therapeutic Agent.—At the recent meeting of the British Medical Association at Birmingham, papers upon hypnotism were read by DR. NORMAN KERR and DR. G. C. KINGSBURY, which excited an interesting discussion.

Dr. Kerr said that he accepted practically all the alleged hypnotic phenomena as facts, but that in hypnosis he could see only a disordered cerebral state with exaltation of receptivity. In order to decide whether hypnotism is a desirable remedy, he said that certain facts should be taken into consideration, namely:

1. That only a certain number of persons can be hypnotized.
2. That the after-effects are a disturbance of mental balance and nerve-exhaustion, and that frequent repetition tends to cause intellectual decadence and moral perversion.
3. That hypnosis is a departure from health, a true neurosis embracing the lethargic, cataleptic, and somnambulistic states.
4. That, although suffering may be assuaged by hypnosis, the underlying disease is not necessarily cured.
5. The dangers of hypnotism are great; each *séance* may bring the patient more under the control of the hypnotist, and may result in the complete submission of the former to the will of the latter.

The greatest success of hypnotism is said to be in the treatment of nervous diseases, but these are the very ailments that Dr. Kerr has seen intensified. In inebriety or narcomania no physician of repute has found hypnotism of any value.

He strongly deprecated public mesmerism as degrading, and hoped that Great Britain would follow the example of Holland and Switzerland, and prohibit such entertainments.

Dr. Kingsbury differed from Dr. Kerr in many respects. He denied that only a few people were susceptible. He thought that the unfortunate association of hypnotism with charlatanism should not prejudice us against it or prevent us from giving it a fair trial.

DR. HACK TUKE thought that, up to the present time, the field of hypnotism in therapeutics has been very limited, but that there are sufficient grounds to warrant a further and unprejudiced trial.

DR. C. L. TUCKEY believed that hypnotism, if skilfully practised, is absolutely harmless, and, in support of that opinion, gave his own experience with 500 cases.—*British Medical Journal*, August 23, 1890.

Indications for the Use of Glycerin Enemata.—The observation of the effects of glycerin enemata and suppositories in a large number of cases has led DR. COLUBINSKI

(*Deutsche medizinische Zeitung*) to the following conclusions:

Glycerin irritates the mucous membrane of the rectum, as shown by the burning sensation produced and by a local rise in temperature. The increased temperature and the desire to defecate are of short duration, and the latter can often be voluntarily overcome by the patient.

The irritation of the mucous membrane does not excite secretion, since the fæces evacuated after a glycerin enema are covered with glycerin only. The best results are obtained when the rectum and sigmoid flexure are filled with scybala; if fæces are in the upper part of the intestine only, glycerin is useless. According to the author, then, the cases in which glycerin enemata and suppositories are indicated are:

1. Those in which the fæcal masses are already in the rectum.
2. Cases in which the fæces are immediately above the rectum—a frequent condition in the lying-in period.
3. Those in which there is mechanical obstruction of the rectum or sigmoid, as by pelvic new-formations, pregnancy, etc.
4. Scrofulous children.
5. Persons in whom, although they have a daily evacuation from the bowels, the act of defecation is accompanied with difficulty and pain, and in whom the fæces are excessively compact.—*Therapeutic Gazette*, August, 1890.

Antifebrin and Camphor in the Treatment of Pneumonia.—DR. SHESHMIUTZEFF (*Novosti Terapii*) writes that he has had excellent results in the treatment of pneumonia by the administration of antifebrin combined with camphor. To an adult he gives about five grains of the former and two and one-half grains of the latter every four hours.

According to this author, the camphor prevents the depressing effects of the antifebrin, and the temperature falls without rigors or collapse.—*St. Louis Medical and Surgical Journal*, September, 1890.

The Treatment of Gonorrhœal Rheumatism.—According to the *Wiener klinische Wochenschrift*, August 28, 1890, RUBENSTEIN has found potassium iodide a rapidly-effective remedy in the treatment of gonorrhœal rheumatism. He gives small doses, usually ordering one drachm of the iodide in five ounces of water, of which he directs the patient to take one or two tablespoonfuls in the morning, and four or five tablespoonfuls in the afternoon. In some cases he gives a still weaker solution, the patient taking one tablespoonful every hour. After a very few hours, in most cases, the pain is markedly lessened, swelling subsides, and a cure is brought about in two or three days.

As to local treatment, the author usually envelops the joint in cloths saturated with a one-per-cent. carbolic acid solution. In some cases he uses a dressing of blue ointment, in others cold, moist cloths, and in still others a solution of common salt. When the pain has disappeared he applies an elastic bandage, and if there is effusion he aspirates. Rubenstein has treated in this manner fifteen cases, some of which were acute, others chronic, and all were cured.

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SATURDAY, SEPTEMBER 20, 1890.

THE PART PLAYED BY DOMESTIC ANIMALS IN THE TRANSMISSION OF DISEASE.

FROM time to time the daily papers or medical journals contain some small note detailing an instance where a contagious malady has been conveyed from place to place by means of pet cats and dogs, or, equally commonly, instances are given in which some domestic animal has itself suffered from a contagious disease capable of afflicting man, and so caused an isolated case or an epidemic. One of the most prominent instances where such transmission occurred was that known as the Hendon outbreak in England, in which it was supposed by some that the milk of a herd of cows affected by a disease resembling scarlet fever produced an epidemic among the children who took the milk. It has also been asserted that the fur of cats and the hair of dogs are ready carriers of contagium, and it is not at all unlikely that the cat may itself suffer from diphtheria, and that many instances of untraceable exposure to disease may have their explanation in these facts. Our attention has been called very forcibly to this subject by the report of several cases of diphtheria, due to the presence of this disease in a pigeon, by BILHAUT in the *Journal de Médecine de Paris* of July 13, 1890. A man who was very fond of keeping these birds noticed that one of them was ill and showed evidences of severe

sickness, which he could not explain, although it was evident that the respiratory passages were involved. The pigeon died, and the veterinary surgeon found post-mortem that the creature had succumbed to diphtheria. From this case the father, daughter, and a child were infected, and all suffered from diphtheria of the fauces and tonsils, with swelling of these glands and all the evidences of a typical attack of the disease. The possibility of the development of diseases in animals which generally affect the human being, is overlooked chiefly because very few of these diseases are supposed to be capable of existence in blood possessing so high a temperature as that of most of the domestic animals, and particularly that of the pigeon, whose normal temperature is so very high. That a cat in its daily wanderings may play in the room of a sick child and then return to that of a well child is so possible that it is curious we do not see more instances in which such an accident occurs. Perhaps contagion is frequently so carried, though we fail to recognize the fact.

THE VALUE OF SALOL.

WHEN a new drug comes before the profession for trial it goes through two stages of existence, in the first of which it is generally praised by authors because they are attracted by its novelty or they wish to have their names connected with the recommendation of a new medicament. In the second stage the "bears" of the medical stock-market find an opportunity for attracting attention to themselves by decrying that which others have lauded to the skies, and thereby giving the editorial shears a second opportunity of cutting out the names of those who have written and are writing about the remedy in question.

Those of the profession who gave an instant's thought before using it, to the chemical composition of the drug which is now under consideration, realized at once that it must surpass salicylic acid in its power of producing aberrant and dangerous symptoms even when given in very small doses to the ordinary individual, or when administered to a patient having idiosyncrasy to either one of its parts, namely, salicylic and carbolic acids.

In the numbers of the *London Practitioner* for July and August, 1890, is a very interesting and able paper by Dr. Hesselbach, of Halle, in which this author considers the action of salol upon the kidneys in relation to its effects when given in poi-

sonous doses, and he has also recorded a case of a young man who took by mistake two drachms of salol, thereby producing death.

His conclusions, after quite a prolonged physiological and toxicological study, are as follows:

1. The large proportion of phenol contained in salol renders it so toxic a substance that its unrestricted therapeutic use is fraught with danger.

2. In renal disease, acute or chronic, salol is contra-indicated.

It should be remembered that when we administer salol that with every one hundred grains of the drug given we give no less than forty grains of carbollic acid, so that if this amount is used during the day an extremely large dose of a very lethal and irritating agent is ingested.

REVIEWS.

SAUNDERS' QUESTION COMPENDS: ESSENTIALS OF THE DISEASES OF THE EYE, NOSE, AND THROAT. By EDWARD JACKSON, A.M., M.D., and E. BALDWIN GLEASON, S.B., M.D. With 118 illustrations. Philadelphia: W. B. Saunders, 1890.

THIS book is the fourteenth of its series, and we understand that still others are to follow it, namely, one on Diagnosis, by Dr. D. D. Stewart, one on Practice, by Dr. Henry Morris, and one on the Diseases of Children, by Dr. Wm. M. Powell. Like its predecessors we can highly recommend this compend to students who desire such an aid, as we believe it is the best short epitome of the subjects of which it treats that we have. We are sorry that in the section on the eye so little is told us about correcting errors of vision by means of glasses, but the omission is excusable in so limited a space, and in a book arranged in this manner.

Dr. Gleason's part of the book is very well done, but we wish that the proof-reading had been more careful in all parts, although this book is better than some of its predecessors in this respect. Thus, on page 139, in the second paragraph, the word "failure" is used where the word feature is evidently intended, and in the endeavor to be concise clearness has sometimes been sacrificed to brevity, chiefly by the omission of "a" and "the." So many short books on the eye and throat are now on the market that no great sale can be expected for any of them, but if any succeed this one should do so.

RAILWAY SURGERY. By C. B. STEMEN, A.M., M.D., LL.D. Illustrated. St. Louis: J. B. Chambers, 1890.

THIS book is an interesting evidence of the growth of railway surgery in importance. While it is a valuable contribution in this respect, it contains very little that cannot be found in general surgical text-books, and is disappointingly imperfect in some of its parts. The chapter on anesthetics is woefully behind the times, particularly in view of the great prominence of this subject at the present day; and the advice given as to the treat-

ment of shock possesses no particular advantages over any other treatment that we are familiar with, and is not as good as it should be. Finally, the book bears unmistakable evidence of having been dictated instead of written, and in consequence shows the ineffaceable evidences of hurry or carelessness, and lack of easy diction. Much of the work is copied *ad libitum* from other writers on the subject treated of, and while due credit is given in each instance, this causes a lack of originality.

CORRESPONDENCE.

CHICAGO.

To the Editor of THE MEDICAL NEWS,

SIR: At a recent meeting of the Chicago Pathological Society, Dr. Homer M. Thomas read a paper on "Nasal Catarrh." After dealing with the physiology of the nasal passages and the etiology of the affection, he dwelt upon the symptomatology and referred to the presence of ocular symptoms in nasal disease as an interesting feature. A certain group of eye-symptoms, such as lachrymation, photophobia, conjunctival hyperæmia, are observed in a number of patients who go to rhinologists, and yet an examination of their eyes reveals no anomaly; the vision is normal, there is no eye-strain, the conjunctivæ are healthy, and the tear-ducts are open. In such cases relief of the coëxisting rhinal affection usually results in the cure of the eye-symptoms. An interesting case was reported. A woman was troubled with severe hypertrophic rhinitis, and stated that she had been unable to use her eyes longer than five minutes at a time for several years. The turbinated bones were well cauterized, after which the patient was referred to an oculist. She returned in two weeks, and stated that she had not been to the oculist, for the reason that after her hypertrophies were cauterized she was able to read at night without eye-symptoms.

Dr. Thomas said that the basis of the successful treatment of nasal catarrh is a thorough application of the principles of antiseptis. Given a case in which it is possible to medicate efficiently the anterior and posterior openings of the nasal passages as often as necessary, a cure can usually be produced. The nasal passages should permit the free entrance and exit of air during inspiration and expiration, and anything that interferes with this normal function is the starting-point of nasal catarrh.

Conditions may exist in the nasal passages which require surgical treatment, such as the straightening of a deflected septum, or the removal of portions of the superior turbinated bones. If there is an obstruction that interferes with free nasal respiration, there can be no successful treatment until the obstruction is removed. It has been estimated that out of six hundred people there are not more than ten who have perfectly straight and smooth passages; hence internal deviations of the passages are not a cause of disease, unless they interfere with perfect nasal respiration. Dr. Thomas believes that a great deal of unnecessary surgery is done upon the nasal passages, and that a large proportion of cases do not require any surgical procedures.

The remedies he advocates are strong astringents, strong solutions of nitrate of silver applied with a post-

nasal syringe, sprays of the tincture of chloride of iron, tannic acid, etc.

At the outset the nasal cavities are sprayed with Dobell's solution, or with listerine. Seiler's antiseptic tablets are also very effective; and albolene, too, is an excellent medicament. A powder which has been found very satisfactory in its action on the mucous membranes of the nasal organs, consists of one grain each of borate and bicarbonate of sodium, three grains of the carbonate of magnesium, four grains of cocaine, and a sufficient quantity of sugar of milk to make one hundred grains. This combination allays acute inflammatory attacks, and also temporarily relieves hypertrophies of the turbinated bones. Dr. Thomas uses it by insufflation, both anteriorly and posteriorly. The action of the powder seems to be due to its stimulation of the vasomotor nerves, causing contraction of the vessels of the terminal bulbs of the peripheral nerves and diminishing their blood-supply.

The Railway Brotherhood Hospital Association was chartered at Springfield a day or two since. Its object is to establish ultimately hospitals for the sole benefit of railroad men at convenient points between New York and San Francisco. It is expected that all the railroad brotherhoods will eventually come in and give the scheme their financial and moral support. A hospital in this city has already been secured. It is the old Bennett Hospital, on the corner of Ada and Fulton Streets.

Dr. John B. Chaffee, who has been a practising physician in Chicago for nearly a quarter of a century, and at one time one of the best-known practitioners in the southern part of this city, died at his home, September 7th. He came from New York State, and graduated at the McDowell Medical College in 1861. During the war he served as surgeon under General Sheridan, and was wounded on several occasions. His wounds resulted in lameness of his left side, which lasted until his death. The cause of death was brain and spinal disease, from which he had been suffering about two weeks.

Thomas Kelly, M.D., C.M., M.R.C.S., has been elected Professor of Medical Chemistry in the College of Physicians and Surgeons, and Dr. Frank B. Earle Assistant to the Chair of Practice.

Dr. James B. Herrick has been appointed Lecturer on *Materia Medica* and Therapeutics in the Woman's Medical College, and Dr. Edwin M. Smith Professor of Anatomy.

The Chair of Professor of the Principles and Practice of Medicine, in Rush Medical College, will be filled hereafter by Dr. Henry M. Lyman, in the place of the late deceased Dr. James Adams Allen; and the Chair of Professor of Physiology, by Dr. Harold N. Moyer.

Dr. Elbert Wing has received the appointment of Lecturer on Nervous and Mental Diseases and Medical Jurisprudence in the Chicago Medical College, Dr. Walter Hay, it is understood, having resigned the professorship of this chair at the close of the last lecture term.

The new medical society, recently chartered, and known as the Chicago Academy of Medicine, will, we are informed, soon begin its strictly scientific work. Among the incorporators are Drs. J. G. Kiernan, Harold N. Moyer, and S. V. Clevenger.

Professor I. N. Danforth recently returned from a trip to Berlin, where he attended the International Medical Congress. His remarks before the September meeting of the Chicago Pathological Society, relative to the social affairs and scientific work done by the Congress, were very instructive and entertaining.

According to our city medical directory, recently issued by Mr. J. Newton McDonald, there are in Chicago, 1621 physicians (including homœopaths, regulars, and eclectics), 27 chemists, 18 microscopists, 574 druggists, 147 nurses, 352 dentists, 18 pharmaceutical, medical, and dental publications, 5 dental colleges, 8 medical colleges (1 eclectic, 2 homœopathic, 4 regular, and 1 physio-medical), 3 polyclinics, 2 colleges of pharmacy, 3 colleges of midwifery, 23 charity and benevolent institutions, 19 dispensaries, 34 hospitals, and 9 training-schools for nurses.

NEWS ITEMS.

Medical Achievement in China.—It is said of Dr. Kerr, a medical missionary at Canton, that he has, in the past thirty-six years, treated over 520,000 patients, and has prepared twenty-seven medical and surgical books. He has trained one hundred medical assistants, chiefly Chinese. China now possesses one hundred and four hospitals and dispensaries, at which, in 1889, more than 348,000 patients received treatment.

Dangerous Public Baths.—The New York City public baths are located at points along the North and East rivers in close proximity to the outlets of sewers. As a consequence, many of the boys who patronize these baths have been reported as under treatment for ophthalmia due to the irritating effects of the polluted water. A preliminary report to the Board of Health tended to confirm the fact of this origin of the trouble, although further investigations show that the number of cases was greatly exaggerated.

La Grippe and Witchcraft.—The prevalence of influenza in Alaska last winter was the cause of many deaths among the natives. Witchcraft and superstition had full sway among them, and in one of the tribes a little boy, aged seven, the nephew of the chief of that tribe, was for some reason supposed to be responsible for the epidemic. It is alleged that after torture the child was about to be burned to death, but was rescued by a courageous white miner.

Typhoid Fever at Princeton, N. J.—The town authorities at Princeton and the College trustees have entered into an agreement to construct a system of sewerage. The College will bear one-half the expense of the original plant. Typhoid fever prevailed to a moderate extent during July, and by the townspeople it was feared that the disease might become epidemic, but on August 1st, the number of cases was known not to exceed seven, all of which were recovering, and that no new cases had developed within several weeks. Analyses of water and milk, suspected causes of the disease, were made, but with negative results. In the case of one suspicious dairy it was found that the cows were allowed to drink from a brook into which fecal sewage found its way, but the milk from that dairy,

after analysis, was declared pure. Although the sanitary status of the College is believed to be above suspicion, the introduction of a modern plant of sewers has been deferred until this outbreak indicated that a longer delay would be dangerous.

Law for the Prevention of Blindness.—The legislature of New York has adopted a law, the substance of which is given below, for the prevention of that element of the causation of blindness which follows ophthalmia neonatorum. The statistics of our institutions for the blind show that not far from one-fifth of all their cases arise from that disease, and the sufferers belong largely to a class of our population that is attended by midwives and untrained nurses. The New York law, which went into effect on September 1st, is as follows:

"Section 1. Should any midwife or nurse having charge of an infant in this State notice that one or both eyes of such infant are inflamed or reddened at any time within two weeks after its birth, it shall be the duty of such midwife or nurse so having charge of such infant, to report the fact in writing within six hours to the nearest health officer or some legally qualified practitioner of medicine of the city, town, or district in which the parents of the infant reside.

"Section 2. Any failure to comply with the provisions of this Act shall be punishable by a fine not to exceed one hundred dollars, or imprisonment not to exceed six months, or both."

Obituary.—The death of DR. JAMES MATTHEWS DUNCAN has been announced by cable as having occurred at Baden, on the 3d instant. He was the distinguished professor of midwifery at the St. Bartholomew's Hospital School, and a valued authority in the departments of gynecology and pediatrics. He was born in Aberdeen, in 1826, and the schools of Edinburgh were the scene of his labors and eloquent lectures during the first twenty-five years of his professional life. In 1877 he went to London, and became eminent as a professor, author, and consultant, although his name and fame were world-wide long before he left the Scotch capital.

—SIR WILLIAM CARTER HOFFMEISTER, M.D., of Cowes, Isle of Wight, died July 29th, aged seventy-three years. He was for many years the attending physician of the Queen, the Prince of Wales, and of many of their relatives and descendants, not a few of whom were ushered into the world under the ministration of this eminent obstetrician and physician. He obtained the honor of knighthood in 1884, in recognition of these services.

—DR. ROBERT W. JONES, Professor of Therapeutics in the College of Physicians and Surgeons of Chicago, died suddenly on September 12th.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 9 TO SEPTEMBER 15, 1890.

By direction of the Acting Secretary of War, a Board of Medical Officers, to consist of EDWARD P. VOLLUM, *Colonel and Surgeon*; GEORGE M. STERNBERG, *Major and Surgeon*; ALBERT HARTSUFF, *Major and Surgeon*; and WILLIAM E. HOPKINS, *Captain and Assistant Surgeon*, is constituted to meet in New

York City, on October 15, 1890, or as soon thereafter as practicable, for the examination of candidates for admission to the Medical Corps of the Army.—Par. 8, S. O. 213, A. G. O., Washington, D. C., September 11, 1890.

By direction of the Acting Secretary of War, JOSEPH K. CORSON, *Major and Surgeon*, is relieved from duty at Fort Sherman, Idaho, and will report in person to the commanding officer Washington Barracks, District of Columbia, for duty at that station.—Par. 4, S. O. 212, A. G. O., September 10, 1890.

By direction of the Acting Secretary of War, the following changes in the stations and duties of officers of the Medical Department are ordered:

HEIZMANN, CHARLES L., *Major and Surgeon*, is relieved from duty at San Antonio, Texas, and will report in person to the commanding officer at Fort Clark, Texas, for duty at that station, to relieve Edward P. Moseley, *Captain and Assistant Surgeon*, who, upon being relieved by Major Heizmann, will report in person to the commanding officer at San Antonio, Texas, for duty at that station.—Par. 23, S. O. 211, A. G. O., Washington, D. C., September 9, 1890.

CARTER, EDWARD C., *Captain and Assistant Surgeon*.—Is granted leave of absence for one month.—Par. 2, S. O. 108, Headquarters Department of the Columbia, September 6, 1890.

By direction of the Acting Secretary of War, NATHAN S. JARVIS, *First Lieutenant and Assistant Surgeon*, is relieved from duty at Fort Verde, Arizona Territory, and will report in person to the commanding officer San Carlos, Arizona Territory, for duty at that station.—Par. 2, S. O. 208, A. G. O., Washington, D. C., September 5, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 13, 1890.

WOOLVERTON, THEORON, *Medical Director*.—Ordered to the U. S. S. "Philadelphia," September 15th.

PENROSE, THOMAS N., *Medical Inspector*.—Detached from the U. S. S. "Richmond."

GARDNER, J. E., *Passed Assistant Surgeon*.—Detached from the U. S. Fish-culture Steamer "Albatross."

DRAKE, N. H., *Passed Assistant Surgeon*.—Detached from the U. S. Coast-survey Steamer "McArthur," and ordered to the U. S. Fish-culture Steamer "Albatross."

BERRYHILL, T. A., *Passed Assistant Surgeon*.—Detached from the Hospital, Mare Island, Cal., and ordered to the U. S. Coast-survey Steamer "McArthur."

HEFFINGER, A. C., *Passed Assistant Surgeon*.—Ordered before Retiring Board, October 1, 1890.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM AUGUST 12 TO SEPTEMBER 6, 1890.

VANSANT, JOHN, *Surgeon*.—Granted leave of absence for thirty days, to take effect upon return to duty of Assistant Surgeon J. C. Perry, September 5, 1890.

WYMAN, WALTER, *Surgeon*.—To proceed to Cape Charles Quarantine Station, on special duty, August 25, 1890.

STONER, GEORGE W., *Surgeon*.—Granted leave of absence for four days, August 19, 1890.

CARMICHAEL, D. A., *Passed Assistant Surgeon*.—Leave of absence extended fifteen days, August 26, 1890.

AMES, R. P. M., *Passed Assistant Surgeon*.—To proceed to Memphis, Tenn., on temporary duty.

DEVAN, S. G., *Passed Assistant Surgeon*.—Leave extended five days, on account of sickness, August 12, 1890.

WILLIAMS, L. L., *Passed Assistant Surgeon*.—Granted leave of absence for thirty days, September 5, 1890.

GOODWIN, H. F., *Assistant Surgeon*.—Granted leave of absence for thirty days, August 21, 1890.

COBB, J. O., *Assistant Surgeon*.—To proceed to Marine Hospital, Detroit, Mich., for duty, August 16, 1890.

HUSSEY, S. H., *Assistant Surgeon*.—Granted leave of absence for thirty days, August 19, 1890.

PERRY, J. C., *Assistant Surgeon*.—Granted leave of absence for twenty days, to take effect when relieved, September 3, 1890.

YOUNG, G. B., *Assistant Surgeon*.—To rejoin his station, at St. Louis, Mo., when relieved, September 3, 1890.

APPOINTMENT.

ROSENAU, MILTON J., *Assistant Surgeon*.—Commissioned as an Assistant Surgeon by the President, August 25, 1890. Ordered to Chicago, Ill., for temporary duty, August 27, 1890.